BİLGİ DÜNYASI
INFORMATION WORLD

e-ISSN: 2148-354X

Greek and Spanish Undergraduate Perspectives on Academic Librarianship, Within and Beyond Library Science Curricula

Yunan ve İspanyol Lisans Öğrencilerinin Akademik Kütüphanecilik ile İlgili Kütüphanecilik Biliminin İçinde ve Ötesinde Bakış Açıları

Stavroula SANT-GERONIKOLOU, Alexandros KOULOURIS, Dimitris KOUIS

Article Information / *Makale Bilgisi*

To cite this article / *Bu makaleye atıf yapmak için:*

Sant-Geronikolou, S., Koulouris, A., & Kouis, D. (2019). Greek and Spanish undergraduate perspectives on academic librarianship, within and beyond library science curricula. *Bilgi Dünyası, 20*(2), 183-215. doi: 10.15612/BD.2019.751

Paper type / *Makale türü*: Refereed / *Hakemli*
Research Article / *Araştırma Makalesi*

Doi: 10.15612/BD.2019.751

Received / *Geliş Tarihi:* 21.04.2019
Accepted / *Kabul Tarihi:* 01.12.2019
Online Published / *Elektronik Yayınlanma Tarihi:* 26.12.2019

Communication / İletişim
Üniversite ve Araştırma Kütüphanecileri Derneği / University and Research Librarians Association
Posta Adresi / Postal Address: Marmara Sok. No:38/17 06420 Yenişehir, Ankara, TÜRKİYE/TURKEY
Tel: +90 312 430 03 61; Faks / Fax: +90 312 430 03 61; E-posta / E-mail: bilgi@bd.org.tr
Web: http://www.bd.org.tr/index.php/bd/index

Research Article

Greek and Spanish Undergraduate Perspectives on Academic Librarianship, Within and Beyond Library Science Curricula*

*Stavroula SANT-GERONIKOLOU*** , *Alexandros KOULOURIS**** , *Dimitris KOUIS*****

Abstract

Library and information science undergraduate programs' adequacy to prepare new information professionals has become the topic of an ongoing debate, with opposing arguments about curricular structure and focus. Within this context, this study, forming part of ongoing doctoral research, analyzes students' opinions on how to enhance library school curricula to effectively respond to academic librarians' new roles and functions. By repositioning the lens on the practical and experience-driven student perspective, away from standard educational practices, the researchers pilot-tested a library science student survey. The mix-methods, student co-developed, survey instrument was tested with a small self-selection sample of future information professionals in Spain and Greece. The study's goal was to contribute to the limited body of research concerning students´ perceptions and awareness about library science education. Survey participants were provided the opportunity to critically evaluate their library school undergraduate programs' responsiveness to the changing academic librarianship landscape. Responses, analyzed by using descriptive statistical and inductive thematic techniques, revealed a limited academic librarianship related content in library and information science curricula. Furthermore, results highlighted a reserved optimism with respect to the library's prospects of upgrading its role in the university, an ambivalence towards librarian's future roles, and a diffuse skepticism around the system's potential to grasp the opportunities that the new information and communication technologies offer. The merit of the study resides in both the diversity of participants' insightful comments and the use of a student validated survey instrument making them active contributors to the library school program's assessment process. Dissimilar to stereotypical research projects, this initiative opens a different perspective to program evaluation and its subsequent alignment with academic library stakeholders' needs.

Keywords: *Student survey, library science curricula, academic library trends, program crowdsourcing.*

* This paper builds on preliminary research findings as presented by PhD Candidate Stavroula Sant-Geronikolou during 10th Qualitative and Quantitative Methods in Libraries International Conference, (QQML 2018) at Chania Cultural Center, Greece on 22 May 2018: "Collecting Senior Student Perceptions around Greek LIS Curricula and the New Academic Librarianship Paradigms" (presentation only).

** Corresponding Author, PhD Candidate, University Charles III of Madrid, Department of Library and Information Sciences, 100302132@alumnos.uc3m.es

*** Assistant Professor, University of West Attica, Department of Archival, Library & Information Studies, akoul@uniwa.gr

**** Assistant Professor, University of West Attica, Department of Archival, Library & Information Studies, dkouis@uniwa.gr

Araştırma Makalesi

Yunan ve İspanyol Lisans Öğrencilerinin Akademik Kütüphanecilik ile İlgili Kütüphanecilik Biliminin İçinde ve Ötesinde Bakış Açıları*

*Stavroula SANT-GERONIKOLOU*** , *Alexandros KOULOURIS***** , *Dimitris KOUIS******

Öz

Yeni bilgi uzmanlarının yetiştirilmesi ile ilgili kütüphanecilik ve enformasyon bilimi lisans programlarının yeterliliği, müfredat yapısı ve odağı hakkındaki karşıt görüşlerle süregelen tartışmaların konusu olmuştur. Bu bağlamda, devam etmekte olan doktora araştırmasının bir bölümünü oluşturan bu çalışma, akademik kütüphanecilerinin yeni rollerine ve işlevlerine etkin bir şekilde yanıt vermeleri için kütüphanecilik okul müfredatının nasıl geliştirileceğine ilişkin öğrencilerin görüşlerini analiz etmektedir. Araştırmacılar, merceği standart eğitim uygulamaların ötesinde pratik ve deneyime dayalı öğrenci bakış açısına tekrar odaklayarak, bir kütüphane bilimi öğrenci anketini pilot olarak test etmişlerdir. Karma metotlarla öğrencilerle ortak geliştirilmiş ölçme aracı, gelecek bilgi uzmanlarının küçük bir kendi kendine seçim örneği ile İspanya ve Yunanistan'da uygulanmıştır. Çalışmanın amacı öğrencilerin kütüphanecilik bilimi eğitimi ile ilgili algıları ve farkındalıklarına ilişkin kısıtlı araştırmalara katkıda bulunmaktır. Araştırma katılımcılarına değişen akademik kütüphanecilik çevresine ilişkin kendi kütüphanecilik okulu lisans programlarının uyumunu eleştirel bir şekilde değerlendirme olanağı verilmiştir. Tanımlayıcı istatistiksel ve tümevarımlı tematik teknikler kullanılarak analiz edilen cevaplar kütüphane ve enformasyon bilimi müfredatının içeriği ile ilgili sınırlı bir akademik kütüphaneciliğin varlığının olduğunu ortaya çıkarmıştır. Bunların da ötesinde, sonuçlar; üniversitede kütüphanenin rolünün güncellenmesi ile ilgili umutlar hususunda ihtiyatlı bir iyimserliğin, kütüphanecilerin gelecekteki rollerine yönelik bir bocalamanın, sistemin yeni bilgi ve iletişim teknolojilerinin sunduğu fırsatları yakalama potansiyeli etrafında yaygın bir şüpheciliğinin altını çizmektedir. Bu araştırmanın değeri hem katılımcıların kavrayıcı yorumlarının çeşitliğinde hem de onları kütüphanecilik okul programının değerlendirme sürecine aktif katkı sağlayan katılımcılar yapan öğrenci onaylı ölçme aracı kullanımında yatmaktadır. Basmakalıp araştırma projelerinden farklı olarak bu girişim, program değerlendirme ve akademik kütüphanecilik paydaşlarının ihtiyaçları ile devamındaki uyumlaştırmaya farklı bir bakış açısı sunmaktadır.

Anahtar sözcükler: *Öğrenci anketi, kütüphane bilimi müfredatı, akademik kütüphanecilik akımları, kitlesel kaynak kullanım programı.*

---

* Bu çalışma, doktora adayı Stavroula Sant-Geronikolou tarafından10th Qualitative and Quantitative Methods in Libraries International Conference, (QQML 2018) at Chania Cultural Center, Greece on 22 May 2018'de sözlü olarak sunulan 'Collecting Senior Student Perceptions around Greek LIS Curricula and the New Academic Librarianship Paradigms" başlıklı çalışmanın ön araştırma bulgularına dayanmaktadır.

** Sorumlu Yazar, Doktora öğrencisi, Madrid III. Charles Üniversites, Kütüphane ve Enformasyon Bilimi Bölümü, 100302132@alumnos.uc3m.es

*** Yrd. Doç Dr., West Attica Üniversitesi, Arşiv, Kütüphane ve Enformasyon Çalışmaları Bölümü, akoul@uniwa.gr

**** Yrd. Doç Dr., West Attica Üniversitesi, Arşiv, Kütüphane ve Enformasyon Çalışmaları Bölümü, dkouis@uniwa.gr

Introduction

While science and philosophy are signaling a paradigm shift in higher education today, academic librarians are still grappling with their emerging role of bridging teaching and self-oriented study spaces (Tevaniemi, Poutanen, & Lähdemäki, 2015). As a solution, library science experts have repeatedly proposed the active involvement of librarians in the accountability and assessment conversation, by advocating their contribution to higher education more dynamically to those outside the field. This requires embracing transformational changes, which can only be achieved by a new type of library professional, one who is open to change, able to adopt flexible and agile approaches towards evolving user needs, and eager to pursue radical collaborations essential to successful realignment with institutional goals and optimum job performance (Boyd, 2008).

The more challenging innovation becomes in the academic library, the more administrators agree upon the urgency to ensure a pipeline of adaptable new information professionals, able to think more like educators than service providers, to rethink existing organizational structures and priorities, to appreciate strategic value planning, and to adopt proactive intervention strategies (Bennett, 2009; Ewell & Wellman, 2007; Germano & Stretch-Stephenson, 2012; Jantz, 2016; Myburgh, 2005). These new librarian missions are associated with the student-centered library model, which accommodates all the information and information technology services necessary to support learning and research in a university, and which is calling into question the initial training of library professionals (Beagle, 2004; Blin, 2009; Red de Bibliotecas Universitarias Españolas, 2003). The profession's evolving nature, as librarians have begun to join forces with institutional partners to co-develop the educational, pedagogical and didactic lifecycle (Baker, 2017), has significant implications for the purpose of library science education.

These transformation-driven library challenges and the absence of consensus about the specific skills and attributes necessary for the academic librarian to cope with current institutional, socio-economic and technological circumstances, have led library and information science experts to suggest a variety of interventions (Brine & Feather, 2003; Choi & Rasmussen, 2009; Dali & Caidi, 2016; Harvey & Higgins, 2003). In their recommendations, they have often emphasized the need for a fresh, holistic, undergraduate educational model that would contribute to the professionalization of new librarians and the pluralism-based enhancement of their innovative capacity (Audunson, 2005; Baker, 2017; Lawson, Kroll, & Kowatch, 2010; Mathews, 2014b; Vassilakaki, 2017).

This study, forming part of the contextualization of ongoing doctoral research that focuses on Greek and Spanish academic library operations and their technology-driven prospects, aims to investigate library school students' viewpoints regarding the extent

to which they feel their programs address the new remit of the academic librarian. For this purpose, and in line with newly introduced crowdsourcing and participatory peer-based approaches, a pilot survey co-developed with library science students was launched, with the voluntary participation of students and new graduates from the Greek and Spanish library school communities.

Theoretical Framework

Instructional and student success technologies, open access, pedagogical science, scholarly communication, and technological advancements have already called into question the academic library's operational and organizational structures. At the same time, an intense discussion has been initiated around the library's new role on campus and in academia, and on its internal and external value as a basic contributor to higher education success and sustainable development.

Despite staff shortages, reduced operating hours and significant reductions in book purchases, subscription and equipment renewal (Bikos, Papadimitriou, & Giannakopoulos, 2014; Giannakopoulos, Koulouris, & Kokkinos, 2014), patron numbers are increasing as libraries gradually upgrade their role by becoming alternative learning centers. The academic librarianship field, that according to some experts, could be a distinct field of science per se, necessitates a new educational framework to support the effective performance of this future-proof environment. Such a framework would help professionals to develop adaptability to the changing environment, enhance their capacity to take proactive rather than reactive approaches to communicate library value, and keep an open mind to many alternative futures (Mathews, 2014b).

If library school curricula are not successful in preparing inventive, proactive and forward-looking professionals, able to explore and develop "new models, new skills and attitudes, new metrics, new ways of looking at old problems, and new approaches for new problems" (Mathews, 2014a; p. 22), these Learning Resources and Research Centers [Note 1] (Pineau, 2011) will not effectively support institutional efforts to improve the quality of learning. Neither will they succeed in relating their stories to institutional strategic plans or stand out as new learning centers (Hiller, Kyrillidou, & Self, 2008).

These new expectations around librarians' roles and functions have stimulated a vivid discussion within the community around: (a) the orientation of future and intra-institutional strategic planning; (b) the definition of a core curriculum; (c) program quality, and (d) reconceptualization of organizational goals, structures, content, and competencies to address the changing needs of academic library patrons (Baker, 2017; Dillon & Norris, 2005). They have also instigated studies around the effectiveness of various aspects of library science programs and the perceptions of new graduates (Combes, Hanisch, Carroll, & Hughes, 2011; Creel & Pollicino, 2012; Ferrer-Vinent & Sobel, 2011).

Experts who are investigating library and information science education's adequacy in meeting the current job market requirements (González, Rodríguez, Hilario, Olivera, & Castro, 2014), the dialogue between key stakeholders (Tsimpoglou, 2009) and the diversity of library science education programs (Borup Larsen, 2005), all agree upon the pressing need to rethink librarian professional development (Bitter-Rijpkema, Verjans, & Bruijnzeels, 2012; Boyd, 2008; Mack, 2011). They also stress the importance of re-energizing undergraduate programs to prepare future librarians for new circumstances and the transition from isolationist to co-ownership and co-creation paradigms (Lankes, 2011).

Part of this ongoing discussion explores how to build on conflicting views regarding new critical skills by discovering points of congruency (Harvey & Higgins, 2003). Despite the wide consensus about the nature of the issues of library science education (Baker, 2017; Borup Larsen, 2005; Creel & Pollicino, 2012; Goodsett & Koziura, 2016; Lawson et al., 2010; Mehra et al., 2011; Myburgh, 2003; Tammaro, 2011), there is still much controversy around the core skills that students should learn. This doubt and uncertainty are also reflected in library school program transformation as a reaction to continuously decreasing enrolment rates (Abadal, 2015).

Similarly to the international context, these concerns around formal undergraduate library science programs' adequacy for the new academic library model are also being raised in the European library community (Abadal, 2015; Ortiz-Repiso, 2015; Partridge et al., 2011), which has not yet been intensively studied according to Borrego (2015). European library science education, a patchwork of local idiosyncrasies in terms of academic traditions, structural specifics and course profiles, today faces the same challenges as other regions of the world (Kajberg, Horvat, & Oğuz, 2009).

When narrowing down the analysis scope to the southern European context, Greece and Spain in particular, international reports place both higher education systems among the ones 'in danger', marked by a low degree of independence, budget cuts and growing student numbers (European University Association, 2016; Mylonas, 2017; Pruvot, Estemann, & Kupriyanova, 2017). The series of infrastructural, professional development and interlibrary collaboration projects and investments put into action during the last few decades, and in parallel with the initiatives of other European counterparts, face obsolescence due to funding reductions. As Spanish and Greek academic libraries are gradually evolving into Learning Resources and Research Centers (Pacios, 2015; Sant-Geronikolou, 2017), where it is no longer a matter of service tasks but rather of cooperation and partnerships, significant questions are being raised about the optimal approach to student preparation (Chow, Shaw, Gwynn, Martensen, & Howard, 2011). The local community seems to share the international library experts' considerations, which are mostly associated with low levels of student satisfaction and decreasing enrolment rates, the profession's identity crisis, the implications of university mergers, the library associations' non-involvement in professional accreditation, and

the strong mimetic forces that hinder the influx of new knowledge and therefore innovation (Audunson, 2007; Beckert, 2010; Chain-Navarro & Muñoz-Cañavate, 2009; Cherry, Freund, & Duff, 2013; Chow et al., 2011; Dali & Caidi, 2016; Goetsch, 2008; Hildreth & Koenig, 2002; Malliari & Matousidou, 2008; Moniarou-Papaconstantinou, Chatzimari, & Tsafou, 2005; Mulvaney & O'Connor, 2014; Muñoz-Cañavate & Larios-Suárez, 2018; Myburgh, 2003; Saunders, 2015; Shank, Bell, & Zabel, 2011; Weiner, 2003).

Not having a long tradition in library science education, both countries' successive attempts to restructure their library science curricula reflect the national efforts to homogenize the field; a field characterized by a high degree of variance and insulation (Moniarou-Papaconstantinou & Tsatsaroni, 2008). The same diversity extends to library schools' disciplinary classification (Wiggins & Sawyer, 2012). The existing 12 Spanish library science public university programs and the three unique Greek library science departments are affiliated with different disciplinary areas, ranging from computing science and management studies to humanities (see Annex 4).

In addition, while it seems that librarian education is a well-researched area with a significant body of literature, (Borup Larsen, 2005; Gerolimos & Konsta, 2008; Haycock, 2007; Horvat, 2003; Malliari & Matousidou, 2008; Muñoz-Cañavate & Larios-Suárez 2018; Ocholla, 2008; Virkus, 2008; Zins & Santos, 2017), until now little attention has been given to the experience-driven students' perceptions of their programs as a more informative, indirect assessment measure that could provide additional knowledge and perspective (Applegate, 2006). Most of the conceptual models for education often incorporate student viewpoints through typical course and faculty evaluation and student satisfaction surveys, at some level. However, these commonly adopted traditional approaches do not have room for student involvement as contributors to the success of the program (Montague & Steadly, 2005).

Research Scope and Objectives

In the overarching intention to explore stakeholder viewpoints on the degree to which library school curricula support the new academic librarian profile, it was decided to adopt a process that would enable library science students in Greece and Spain to contribute to the assessment of their programs (Montague & Steadly, 2005). To this end, a survey instrument was co-developed with the help of Greek library science department junior students, which was later piloted with a self-selected sample of Greek and Spanish public university senior students and recent graduates. Participants were invited to the survey through an open call posted on IWETEL and EDICIC Ibero-American email distribution lists and the use of inter-institutional communication channels. The researchers' engagement with the particular library and information science context and topic results from their institutional affiliations and is framed within the scope and aims of an ongoing doctoral research that focuses on Greek and Spanish academic library operations.

Providing undergraduates with the opportunity to participate in the library school program's assessment process could be viewed as a response to academic library alignment challenges. It could eventually help library administrators to effectively align operations with stakeholder needs, leading to numerous strategic and tactical positive consequences. Among expected positive outcomes are the possibility of benefiting from current collaborative actions, the increase in organizational morale and value creation from intellectual capital assets. Therefore, it was considered, at this point, most relevant to investigate senior students' and new graduates' viewpoints on whether their departments are taking advantage of new developments and tools to reinvent academic library work, and the extent to which existing courses are consistent with the changing landscape.

More specifically, the survey instrument co-developed with students targeted senior undergraduates and new information professionals and sought to identify: (a) whether their studies are preparing them to meet the changing needs of academic libraries; (b) whether the academic librarianship topic is adequately addressed within existing curricula, and (c) whether library schools are effectively equipping library professionals with the necessary skills to overcome innovation-related operationalization challenges and to serve as liaisons within the institution and beyond.

Finally, through the analysis of inter-country differences and similarities on how new information professionals perceive their local educational systems' responsiveness to academic librarianship challenges, the study contributes actionable data that could support topic-specific conversations on a broader international level. However, comparing programs was not within our research scope. For this reason, we did not collect or analyze in any way survey participants' responses in association with their schools' credentials. This choice was dictated by the need to eliminate students' considerations, regarding potential recognizability and to minimize the risk of results favoring specific school programs. Instead, by adopting a more generic approach to capitalizing on students' comments, it was envisioned that the ways that these two national undergraduate librarian education systems address the academic librarianship-oriented aspects would be brought to light and subsequently an intercountry dialogue on the topic would be initiated.

Research Value

The merit of the study resides in both the method, the use of a student-validated survey instrument, and the collection and analysis of the rather limited, at this exploratory stage, but quite illuminating participants' feedback. The adopted methodology offered a different perspective to program evaluation, as it addressed the topic from both a micro and a macro perspective. It also offered valuable insights into student understanding of program composition and value, and the academic library's possible futures.

During this study, the researchers were faced with a series of challenges associated with the use of mailing lists and student demotivation. Indeed, the open call for participation through email distribution lists and the self-selection sampling method are probably the main reasons why participation in the survey was limited. Low participation could be also attributed to students' lack of interest in the topic as supported by their responses to the first part of the survey (general survey items), according to which employment in a university library was among their least favored career choices. Nevertheless, the pilot survey provided the opportunity to detect possible logistical, technical and content issues prior to conducting a larger sample size data collection.

Methodology

The project was designed and carried out in a participative peer-based approach, exploring the topic away from standard educational practices and adopting the same crowdsourced and heutagogical approaches that are gaining traction (Blaschke, 2012; Blaschke & Hase, 2015; Paulin & Haythornthwaite, 2016). Utilizing a survey instrument, reformulated and validated by Greek library school junior students, the research team envisioned securing additional knowledge regarding the target population's perspective. Involving students in the survey's design process had a bifold purpose: it aimed not only to ensure the survey's feasibility, readability, clarity, and comprehension, but also contributed to content validity by asking them to examine survey the adequacy of the items for the research purpose. The students' input resulted in a mixed-methods survey that, by combining both quantitative and qualitative components, gave us the ability to triangulate findings in a way that was different to stereotypical research practice (Creswell, Plano Clark, Gutmann, & Hanson, 2003).

Overall, 35 junior students at the [University Name] helped revise the survey instrument's draft version by proposing adjustments and modifications, such as rephrasing, additional open-ended questions, and answer choices, to enhance understanding and to achieve higher response accuracy. In the end, all student inputs coalesced into a final output before being made available to survey recipients (see Annexes 1 and 2). Adopting a convenience sampling technique, the target population in Spain was informed about the survey between February and May 2018 through two Ibero-American library science email lists (IWETEL [Note 2], EDICIC [Note 3]) and through Erasmus program contacts. As to the Greek sample, invitations were sent out directly to senior students' email accounts at the department conducting the research, while for the two remaining library schools, the survey was marketed to the student community through professional affiliations.

The launch of the pilot survey was envisioned to precede dissemination of the survey instrument in a future larger study. Data obtained from the 41 Greek and 29 Spanish participants were analyzed using descriptive statistical and inductive thematic techniques (Miles, Huberman, & Saldaña, 2014). More specifically, responses to the

Likert style questions were analyzed using descriptive statistical techniques, while responses to the open-ended survey questions were annotated and coded thematically through an inductive approach. The findings arising from this process are outlined in the discussion section.

Survey instruments developed in collaboration with stakeholders, known as 'questionnaire development by committee', are often problematic due to the tendency of including a rather large number of question items. The researchers, in their effort to address this issue in the present survey, identified 15 questions out of the initially proposed 25 topic-specific items, ones that could ideally form the basis of the scale, comprising four constructs: (1) a library school program's capacity to help librarians cope with the new paradigms (five items); (2) the integration of academic librarianship into undergraduate programs (two items); (3) academic library value and prospects (four items), and (4) student involvement/participatory value creation (four items) (see Annex 2). The rest of the questions (mostly the open-ended and matrix items) although delivered to the survey participants, were not considered in the scale's statistical descriptive and reliability testing analysis (see Annex 5). Nevertheless, all results will be reported in the discussion section, including responses to four of the eight generic questions (see Annex 1). This excluded 10 topic-specific items from the analysis, which are under consideration for inclusion in a future larger study.

Presentation of Survey Findings and Discussion

The following presentation and analysis of the findings are thematically arranged in a way that will better help develop the narrative. The discussion of survey findings includes responses to both generic and topic-specific questions (see Annexes 1 and 2), in an overarching attempt to offer a comprehensive view of academic librarianship. The study also aims to capture contextual factors that could contribute to a better appreciation of the topic.

Following the response collection, scale and Likert items descriptive statistics (see Annex 6), including central tendency (mean, median, and mode), variability (standard deviation and range), skewness, and symmetry (kurtosis), as well as the interquartile range were computed [Note 4]. According to the results, the mean score of items Q2.1, Q2.25 and Q2.5 are the highest while the mean score of item Q2.11 is the lowest. As to standard deviation, items Q2.15, Q2.11, Q2.25, Q2.13, and Q2.5 have the highest score, which indicates greater variability, while items Q2.9 and Q2.14 have the lowest, which indicates lower polarization among participants. Calculating the alpha for each sub-scale was avoided as it would have been meaningless due to the small number of items. As to the scale's Cronbach alpha, the coefficient of 0.647 suggests an acceptable internal consistency for exploratory research in the social sciences, according to Hair et al. (2006).

Factors Affecting Academic Librarianship and Library School Programs

Among the initial generic questions, students were asked to indicate their most preferred media for updating their knowledge of the profession (Figure 1 - Q1.4).

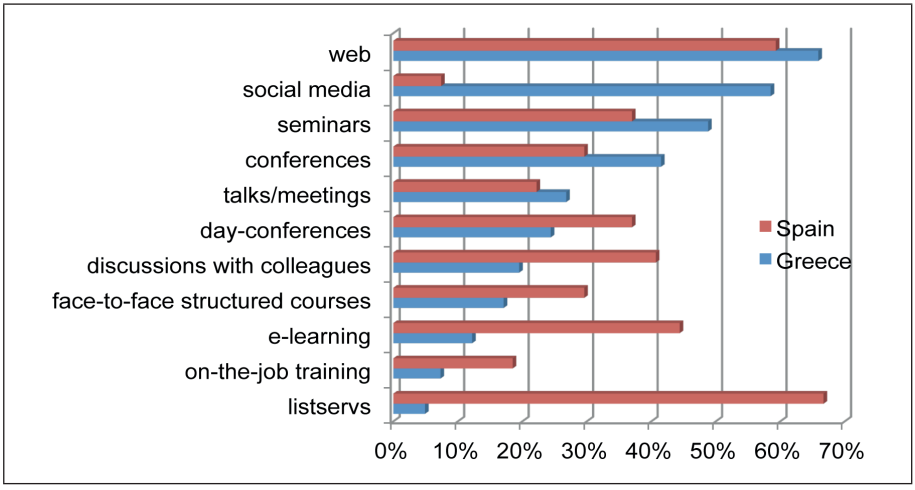


Figure 1. Most preferred channels for knowledge updates (Q1.4)

As Figure 1 illustrates, 'web and social media' constitute Greek library school students' most favored channel, followed by 'seminars' and 'conferences', which might also refer to online participation or event follow-up on social media. This last argument is, however, a hypothesis that should be further investigated. Besides sharing the same appreciation for seminars, conferences and the web with their counterparts in Greece, the Spanish university students' most popular avenues for obtaining information on the profession are face-to-face structured courses, discussions with colleagues, and professional network email distribution lists, which are moderated subscription professional internet fora that still exist, despite the increasing popularity of social media (Muñoz-Cañavate, González, Hípola, & Miranda, 2017). The Greek sample's low preference for face-to-face interaction suggests a further investigation of potential communication culture issues. Intergroup comparative analysis identified the difference in the way these two library science ecosystems understand, promote and capitalize on professional development opportunities. This differentiation could be attributed to the local availability of professional knowledge distribution channels and extracurricular training opportunities, and context-specific communication cultures which ought to be among the first things to consider at the time of programs' reconceptualization.

Regarding the question about academic libraries hot topics for the next decade (Figure 2 - Q1.6), both groups seemed to share the same beliefs around the future

prevalence of the topics of open access, user training, and the demonstration of library contributions in the learning and teaching process. These findings are similar to international survey results, as presented in the Online Computer Library Center's priorities and perspectives reports [Note 5]. Participants also rated highly the 'library value demonstration in the educational process' option, which could be considered as an indication of increasing awareness of the way the new higher education paradigm impacts their future roles and responsibilities. The fact that the topics of digitization, library automation, library management systems, and institutional repositories are expected to exclusively dominate Greek library conversations over the next decade, might have to do with the country's lower degree of compliance with the new academic library model. On the other hand, Spanish library school students seemed more consumed with the 'research support', 'research data management' 'consortia', and 'mobile access' topics. Finally, 'open access' and 'user training' are areas of convergence among Greek and Spanish library school students' hot topic choices.

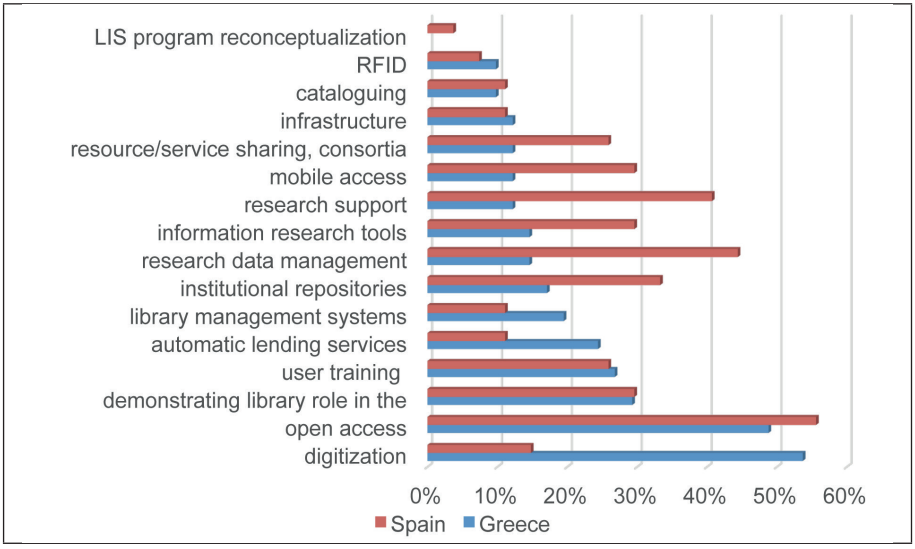


Figure 2. Hot topics for academic libraries for the next decade (Q1.6)

Students' mixed responses, along with a great uncertainty as to the question of whether they feel academic libraries decisively shape learning (Q2.11), were accompanied by an abundant variety of comments. Their remarks brought to the surface several issues, especially on the Greek side, among which are the perpetuated use of outdated material, low interpersonal skills in staff, communication gaps, and academic librarians' inability to demonstrate the value of a library.

When asking them whether they believe that current programs are preparing future information professionals for more dynamic integration in the educational process (Q2.13), 69% of responses received were affirmative, exhibiting a restrained optimism around the potential of librarians to help shape education.

As to internal and external factors that affect academic libraries' futures (Figure 3 - Q1.7), funding, digital security, technological developments, staff training, and new didactic approaches were among the top-rated concerns, as anticipated. The fact that 'norms, standards, regulations' and 'accountability/ROI' (Return on Investment) are not expected to seriously affect the future of the research library is subject to debate. It is arguable whether this contention can be attributed to the fact that participants had, at the time of response, the Mathews' (2014b) flexible, adaptable, agile librarian model in mind, able to effectively transcend organizational boundaries for the benefit of the community they serve. On the other hand, it could be an indication that participants are unaware of top-down institutionally articulated frameworks or the normative and coercive mimetism, by which a library is generally obliged to abide. When students were also given the opportunity to indicate program components in need of improvement (Q2.3), both groups emphasized the urgency of reinforcing the practical component.

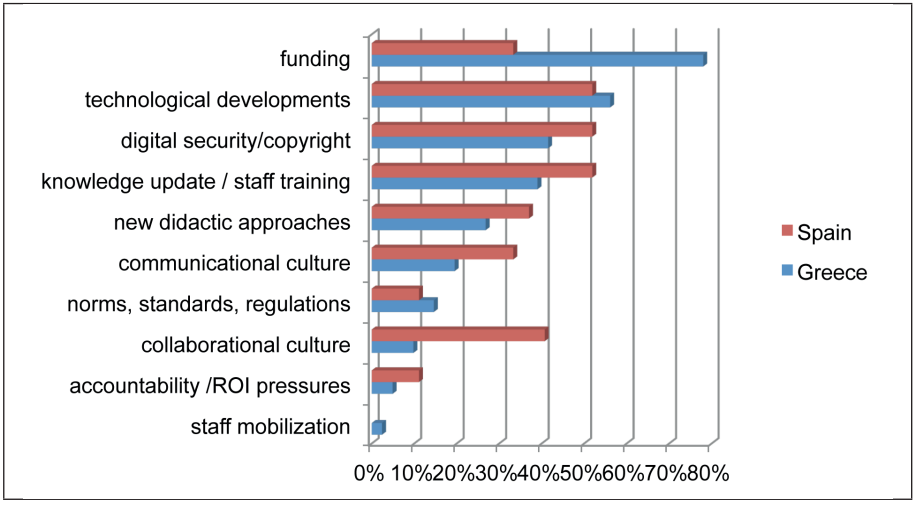


Figure 3. Factors affecting the academic library's future (Q1.7)

Library School Program - Consistency with Changes in the Academic Library World

Response averages per country for the 5-point Likert scale questions (Q2.1, Q2.5, Q2.13, Q2.15, and Q2.25), focusing on a set of specific library school curricula aspects and on academic library value and prospects, as illustrated in Annex 6, were also analyzed.

With regard to the question about the programs' appropriateness in preparing students for future job requirements (Q2.1) and their compliance with new developments in the field (Q2.5), averages indicate a moderate consistency with changing workplace scenarios. Judging from students' later comments, there are still multidisciplinarity, pedagogical and relevance issues that could potentially affect new practitioners' ability to support their libraries in achieving greater value and impact. Moreover, the integration of the topic of academic librarianship within library science study programs (Q2.15) is not adequate, according to the responses of the participants, who strongly feel more attention should be paid to this aspect (based on answers to Q2.14 where the "Yes" answer was selected by 82% of the students).

While participants argued that library schools provide them with opportunities of getting more involved in library operational and/or organizational changes (Q2.18, the "Yes" answer was selected by a 58.3% student average), they consider their participation in curricular programmatic reformulation discussions quite limited (Q2.17, the "No" answer was selected by 63% of the students).

Although the composition of programs leans towards the development of information technology competencies and transferable skills (e.g., critical thinking, collaboration) in the Greek context, and information technology competencies and core theoretical aspects (based on responses to Q2.4) in the Spanish context, respectively, both groups overwhelmingly agreed on the need to enhance the practical component of library science education (Q2.10). They still perceive a gap between their education and several important skillset areas required in the workplace, among which, most notably, are the dynamic integration in the educational process, innovative service development, data analysis, operational change management, and information literacy (Infolit) course design. A detailed breakdown of their responses to survey question Q2.8 is illustrated in Figure 4:

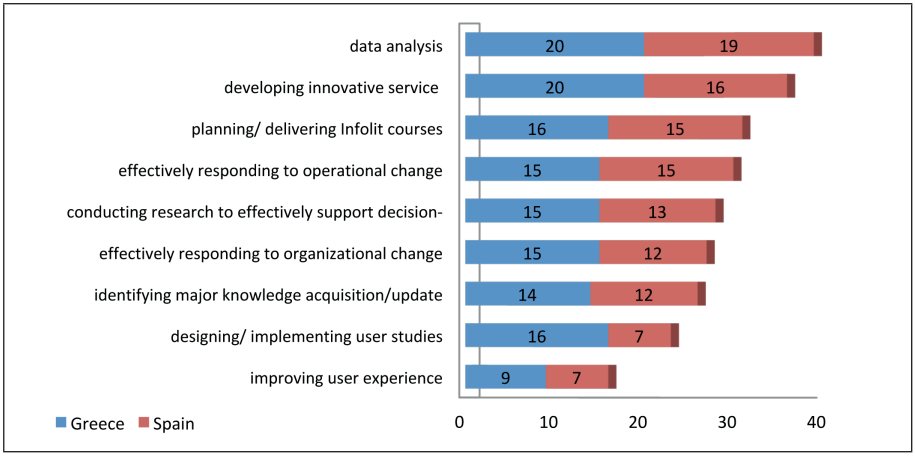


Figure 4. Less accommodated areas of knowledge, skills, and abilities within library science curricula (Q2.8)

As changes in higher education call for academic libraries and information professionals to embrace, now more than ever, the teacher-librarian, technology specialist, knowledge production collaborator, and change facilitator roles (Vassilakaki, 2017), many educational agencies have already formulated proposals for curriculum transformation. Nevertheless, there is still a perceived gap between the importance that students attribute to several curricular aspects and their competence level in these same areas (Q2.22 and Q2.23), especially in the case of strategic communications, marketing, data analysis, entrepreneurship, research, and instructional skills. Indeed, an investigation of undergraduate programs in library schools in Greece and Spain revealed that the percentage of courses associated with new critical skills is 20% and 24%, respectively (see Annex 3) [Note 6].

Finally, Figure 5 (Q2.10) attempts to quantify respondent comments and suggestions on how to best enrich the curriculum, where we can see a categorization of the variety of recommendations. Focusing on the practical component, Greek students proposed increasing the laboratory courses and reconnecting to the actual workplace with more on-the-job training and apprenticeship schemes. Both groups insisted on the necessity to reinforce program transdisciplinarity and to increase information technology courses. Additionally, participants from Spain, apart from strongly insisting on the need for course content update, went one step further by proposing the development of different curricular tracks and specializations to amplify student course choices.

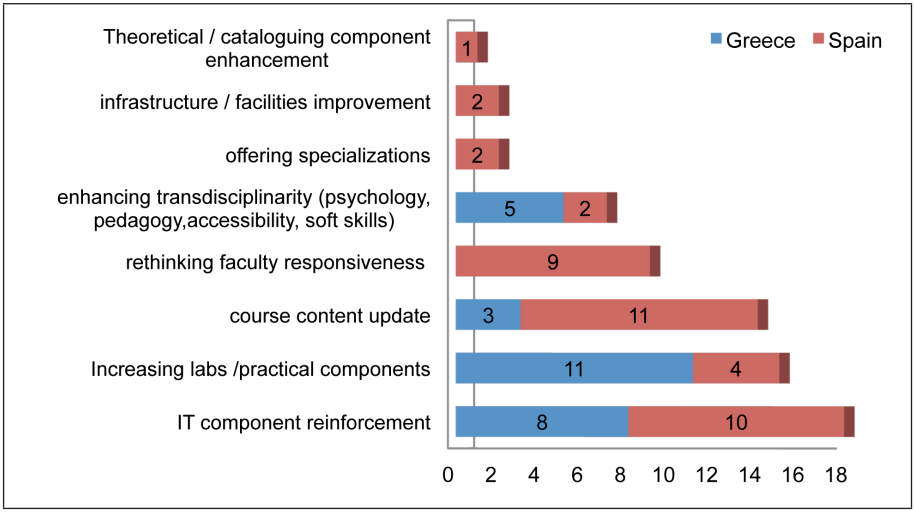


Figure 5. Student suggestions on library school program improvement (Q2.10)

Academic Librarianship Prospects

As to the importance of the role of the librarian in today's higher education ecosystem (Q2.25), they almost uniformly rated it from high to very high. However, compared to previous responses (Q2.1, Q2.5, Q2.11, and Q2.13), this is illustrative of the prevalence of the traditional paradigm supporting library's assistive rather than deeply pervasive role in the educational process for both countries.

Despite the set of critical issues and factors acknowledged as potential blockers to academic librarianship progress, responses to Q2.21 reveal that both participant groups share a strong conviction about libraries becoming innovation incubators sooner or later.

The next set of open-ended questions aimed to investigate opinions and predictions regarding the academic library's development prospects. Again, an attempt to quantify responses on the future of academic librarianship (Q1.5), revealed a predominantly positive stance. Among the most repeated expressions were "unless", "if", "provided", "on the condition of", "flexibility", "adaptability", "transdisciplinarity", "collaborating", and "marketing". Many participants seemed particularly puzzled regarding university library administrators' ability to capitalize on new information technology possibilities on the one hand, and of redefining curricula with a mindset towards the emerging professional profiles on the other.

At this point, some characteristic verbatim student comments to the Q1.5 question, "What's your opinion on the future of academic librarianship?" have been included:

A. Selected Greek library school student responses:

- "It will stand out as a key determinant provided librarians improve their critical thinking skills"
- "Academic librarianship must be dynamically integrated in the educational world, becoming the top higher education priority"
- "They [academic libraries] will become particularly effective after undergoing the right updating and upgrading process"
- "It necessitates greater flexibility in addressing the needs of the digitally savvy youth"
- "It should adapt to Higher Education transformations…"
- "If they [academic librarians] do their job properly and establish good communication channels with the user community, they will be able to cope"

B. Selected Spanish library school student responses:

- "They have a long way to go yet"
- "They will always constitute one of student learning foundations"
- "Unless they modernize and move from a predominant library-oriented approach closer to the business/technological domain, the number of enrolled students will fall"
- "The traditional librarian role will end up fading away as there are certain [professional] aspects not all that necessary anymore. Information search and management along with transdisciplinary collaboration with researchers, at least within the university, will surely be our profession´s most probable future"
- "With enormous challenges and possibilities"
- "Academic librarianship needs to take the plunge into social networks"
- "It needs to speed up its adaptation to social and technological realities"

Research Challenges and Limitations

Among the study's weaknesses is the use of a small voluntary sample. Another limitation resides in the sample's composition of almost exclusively library science senior undergraduates, as a larger sample might have provided a greater diversity of viewpoints on the topic. The non-probability sampling approach adopted for this first exploratory study resulted in the collection of only 41 and 29 responses from the Greek and Spanish participant pool, respectively. The low responsiveness [Note 7] is quite common where students and e-surveys are involved and is less serious for preliminary research, according to Burkell (2003) and Sax, Gilmartin, and Bryant (2003). It may, therefore, be asserted that the responses collected at this exploratory stage are valuable and could make a significant contribution to the conversation around library school program reconceptualization.

Another issue is associated with the co-construction of the survey instrument, as contributors (library school junior students, in our case) usually harbor the tendency to think that questionnaires are infinitely expandable and overlook the fact that such an expansion equates to a useless data-collection instrument. This problem can be counterbalanced by the development of reliable rubrics for the questions, the addition of more items, the transformation of the matrix, dichotomous or multiple-choice items into Likert scale questions, and the increase in the sample size. Finally, while bias in the results' interpretation and reporting was minimized through careful discussion of findings and implications within the research team, it cannot be assumed that the findings are applicable to all members of the population (Hardesty & Bearden, 2004).

Conclusions and Recommendations

Concerns regarding undergraduate librarian education extend to many national and international contexts. These include the absence of a core curriculum for the discipline, a perceived gap between education and practice, and program disciplinary orientation (Partridge et al., 2011).

Through the pilot delivery of a mixed-methods, student co-developed survey instrument, the study's intention was to gain library school student insights into Greek and Spanish programs' adequacy in preparing academic librarians. This process helped to identify a variety of issues that could be further turned into actionable data for the benefit of future information professionals. The analysis of main survey findings revealed: (a) a general lack of interest and ambivalence about several academic librarianship topic-specific aspects which could very well become object of future studies; (b) the limited integration of academic librarianship modules into library science curricula; (c) a gap between the importance attributed by students to a number of academic librarianship critical skills and their corresponding competencies, and (d) a reserved optimism around librarians' potential to upgrade their role within a university's new remit and functions.

Participants think highly of librarians' value to the current higher education landscape and are optimistic about their pervasive role in the educational process and in supporting and promoting innovation. Nevertheless, they expressed moderate confidence in program adequacy in addressing the new challenges, and uncertainty about the prospects of librarian new responsibilities. Both respondent groups shared a diffuse skepticism about their programs' effectiveness in grasping the opportunities that the new technological developments offer. Almost equally aware of the general challenges facing the library world and library science curricula today, they made several suggestions worth considering on how to best remedy the situation.

Through the analysis of the Spanish sample comments, it became evident that they exhibit a less optimistic stance towards undergraduate programs' prospects of reshaping a new academic librarian identity. As to the overarching question of whether there is indeed a need for change in the structure and content of the curriculum to better prepare new professionals for the evolving academic library functions, the consensus of respondents seems to be an emphatic "yes", although more stakeholder input would be necessary to confidently answer this question.

Future Lines of Research

A more extensive and pervasive exploration of topics, such as library staff involvement in library school program development, faculty learning habits and teaching styles, and the motivation behind the choice of working in an academic library, could help to better appreciate some of the complexities involved. By complementing present research with further information, preferably of qualitative nature, a better portrait of the academic librarian that is being projected or promoted through library school programs could be drawn. Thus, such complementary research could provide additional insights that decision-makers and curricula developers could eventually turn into actionable data in support of the integration of academic librarianship in library science education.

Finally, findings from the statistical analysis of responses to the pilot survey led to several proposed enhancements. Among them are the increase of the scale's reliability scores by developing rubrics, the transformation of the matrix, dichotomous or multiple-choice questions into Likert items and the increase of the sample size. Participant performance during the initial survey instrument's design process also calls for the introduction of a general survey design course in Greek library and information science undergraduate curricula.

Notes

1. Service convergence to support learning and research in the digital world has led to the transformation of college and university libraries into technology-rich spaces, often changing their names to 'learning centers', 'information commons', 'Learning Commons', 'Library & Information Centers' or similar (Beagle, 1999; Beatty & White, 2005; Corrall, 2010; Creth & Lowry, 1994; Crockett, McDaniel, & Remy, 2002; Oyston, 2004; Sinclair, 2009).

2. IWETEL library science email distribution list available on https://www.rediris.es/list/info/iwetel.html

3. EDICIC information science faculty and researchers' email distribution list available on https://www.rediris.es/list/info/edicic.html

4. ASP Team (2018). JASP (Version 0.9) [Computer software].

5. Reports detail findings from an OCLC study conducted in 2012 and aiming to learn about librarian priorities, initiatives, thoughts on the future of their service points and the sources they use to keep up with developments in the library field. Available at: https://www.oclc.org/research/publications/all/de-libraries.html

6. The academic librarianship new critical skills categorization illustrated in the chart was elaborated drawing on the works of Baker, 2017; Cherry et al., 2013; Georgy, 2011; Goodsett & Koziura, 2016; Oakleaf, 2010.

7. The average number of places offered in library and information science undergraduate programs can be estimated to 50 for the case of Spanish public universities (calculated value based on data published on the official 12 library science program websites and referring to admissions between 2015 and 2019) and 130 for the three Greek higher education librarianship departments (based on data published in the Government Gazette, March 2018, Issue 1123).

References

Abadal, E. (2015). The challenges of training in Library and Information Science. *BiD: Textos universitaris de biblioteconomia i documentació*, núm. 35. Retrieved from http://bid.ub.edu/en/35/abadal.htm.

Applegate, R. (2006). Student learning outcomes assessment and LIS program presentations. *Journal of education for library and information science*, *47*(4), 324-336.

Audunson, R. (2005). The public library as a meeting place in a multicultural and digital context: The necessity of low-intensive meeting-places. *Journal of Documentation*, *61*(3), 429-441.

Audunson, R. (2007). Library and Information Science Education—Discipline Profession, Vocation? *Journal of Education for Library and Information Science*, *48*(2), 94-107.

Baker, D. (2017). The end of wisdom? The future of libraries in the digital Age. In D. Baker, & W. Evans (Eds), *The End of Wisdom?* (pp. 1-37). Oxford United Kingdom: Chandos Publishing.

Beagle, D. (1999). Conceptualizing an information commons. *The Journal of Academic Librarianship*, *25*(2), 82-89.

Beagle, D. (2004). From information commons to learning commons. White paper presentation at the University of Southern California Leavey Library 2004 Conference on Information Commons: Learning Space Beyond the Classroom. https://www.academia.edu/3910575/From_Information_Commons_to_Learning_Commons

Beatty, S., & White, P. (2005). Information commons: models for eLiteracy and the integration of learning. *Journal of eLiteracy*, *2*(1), 2-14.

Beckert, J. (2010). Institutional isomorphism revisited: Convergence and divergence in institutional change. *Sociological Theory*, *28*(2), 150-166.

Bennett, S. (2009). Libraries and learning: A history of paradigm change. *portal: Libraries and the Academy*, *9*(2), 181-197.

Bikos, G., Papadimitriou, P. A., & Giannakopoulos, G. (2014). School libraries' impact on secondary education: A users' study. *Library Review*, *63*(6/7), 519-530.

Bitter-Rijpkema, M. E., Verjans, S., & Bruijnzeels, R. (2011). The Library School: empowering the sustainable innovation capacity of new librarians. *Library Management*, 33(1/2), 36-49.

Blaschke, L.M. (2012). Heutagogy and lifelong learning: A review of heutagogical practice and self-determined learning. *The International Review of Research in Open and Distributed Learning*, 13(1), 56-71. http://dx.doi.org/10.19173/irrodl.v13i1.1076

Blaschke, L. M., & Hase, S. (2015). Heutagogy, technology, and lifelong learning for professional and part-time learners. In A. Daily-Hebert, & S.D. Kay (Eds.), *Transformative perspectives and processes in higher education* (pp. 75-94). Cham, Switzerland: Springer International Publishing.

Blin, F (2009). Europe: Academic Libraries. In I. Abdullahi (Ed.), *Global Library and Information Science: A Textbook for Students and Educators. With Contributions from Africa, Asia, Australia, New Zealand, Europe, Latin America and the Carribean, the Middle East, and North America* (Vol. 136, pp. 329-342). Berlin, Germany: Walter de Gruyter.

Borrego, A. (2015). Library and Information Education in Europe: an overview. *BiD: Textos universitaris de biblioteconomia i documentació*, núm. 35. Retrieved from http://bid.ub.edu/en/35/borrego.htm.

Borup Larsen, J. (2005). A survey of library & information science schools in Europe. In L. Kajberg ,& L. Lorring (Eds), *European Curriculum Reflections on Library and Information Science Education (pp.* 232-242). Copenhagen, Denmark: Royal School of Library and Information Science.

Boyd, R. (2008). Staffing the Commons: job analysis in the context of an Information Commons. *Library Hi Tech*, 26(2), 232-243.

Brine, A., & Feather, J. (2003). Building a skills portfolio for the information professional. *New Library World, 104*(11/12), 455-463.

Burkell, J. (2003). The dilemma of survey nonresponse. *Library & Information Science Research*, *25*(3), 239-263.

Chain-Navarro, C., & Muñoz-Cañavate, A. (2009). Information science courses and the graduate job context in Spain. *Education for information*, *27*(2-3), 115-126.

Cherry, J. M., Freund, L., & Duff, W. M. (2013). Students' perceptions of information programs in Canada. *Journal of Education for Library and Information Science*, 54(3), 174-190.

Choi, Y., & Rasmussen, E. (2009). What qualifications and skills are important for digital librarian positions in academic libraries? A job advertisement analysis. *The Journal of Academic Librarianship*, *35*(5), 457-467.

Chow, A.S., Shaw, T.L., Gwynn, D., Martensen, D., & Howard, M. (2011). Changing times and requirements: Implications for LIS Education. *LIBRES: Library and Information Science Research Electronic Journal,21*(1). Retrieved from http://libres.curtin.edu.au/libres21n1/Chow_Shaw_Gwynn_Martensen_Howard_REF_LIBRES21n1.pdf

Combes, B., Hanisch, J., Carroll, M., & Hughes, H. (2011), 'Student voices: Re-conceptualising and re-positioning Australian library and information science education for the twenty-first century'. *The International Information & Library Review*, *43*(3), 137-143.

Corrall, S. (2010). Educating the academic librarian as a blended professional: A review and case study. *Library Management*, *31*(8/9), 567-593. Retrieved from http://d-scholarship.pitt.edu/25123/1/Corrall_%282010%29_e-print.pdf

Creel, S. L., & Pollicino, E. B. (2012). Practitioners'& LIS students' perceptions on preparedness in the New York metropolitan area. *Education for Information*, *29*(1), 53-69.

Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2003). Advanced mixed methods research designs. In A. Tashakkori, & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 209-240). Newbury Park, California: Sage Publishing.

Creth, S, & Lowry, C. B. (1994). The Information Arcade: playground for the mind. *Journal of Academic Librarianship*, *20*(1), 22-23.

Crockett, C., McDaniel, S., & Remy, M. (2002). Integrating services in the information commons: toward a holistic library and computing environment. *Library Administration & Management*,*16*(4), 181-186.

Dali, K., & Caidi, N. (2016). A two-way street: Building the recruitment narrative in LIS program. *New Library World*, *117*(7/8), 499-539.

Dillon, A., & Norris, A. (2005). Crying wolf: An examination and reconsideration of the perception of crisis in LIS education. *Journal of Education for Library and Information Science*, Vol. 46, No. 4, pp. 280-298.

European University Association. (2016). *Public Funding Observatory 2016. Brussels, Belgium*. Retrieved from https://www.eua.eu/downloads/publications/eua%20public-funding-observatory%202016.pdf

Ewell, P., & Wellman, J. (2007). Enhancing student success in education. National Postsecondary Education Cooperative (NPEC). Retrieved from https://nces.ed.gov/npec/pdf/Ewell_Report.pdf

Ferrer-Vinent, I. J., & Sobel, K. (2011). A study of master of library science candidates and librarians at a practicum site library. *New Library World*, *112*(7/8), 365-376.

Georgy, U. (2011). Curricula development in library science: A nation-wide core curriculum? *Education for Information*, *28*(2-4), 203-213.

Germano, M. A., & Stretch-Stephenson, S. M. (2012). Strategic value planning for libraries. *The Bottom Line*, *25*(2), 71-88. https://doi.org/10.1108/08880451211256405

Gerolimos, M., & Konsta, R. (2008). Librarians' skills and qualifications in a modern informational environment. *Library Management*, *29*(8/9), 691-699.

Giannakopoulos, G., Koulouris, A., & Kokkinos, D. (2014). Libraries in crisis: a glimpse over Greece and Cyprus. *Procedia-Social and Behavioral Sciences*,*147*, 411-417.

Goetsch, L. A. (2008). Reinventing our work: New and emerging roles for academic librarians. *Journal of library administration*, *48*(2), 157-172.

González, Y. M., Rodríguez, C. T., Hilario, A. B. R., Olivera, L. H., & Castro, C. C. (2014). La inserción profesional de los graduados en Información y Documentación: el caso de la Universidad de Salamanca. *BiD Textos universitaris de biblioteconomía i documentació*, No 32. Retrieved from http://bid.ub.edu/es/32/martin2.htm

Goodsett, M., & Koziura, A. (2016). Are library science programs preparing new librarians? Creating a sustainable and vibrant librarian community. *Journal of Library Administration*, *56*(6), 697-721.

Hair, J., Black, W., Babin, B., Anderson, R., & Tatham, R. (2006). *Multivariate data analysis* (6th ed.). Uppersaddle River, N.J.: Pearson Prentice Hall

Hardesty, D. M., & Bearden, W. O. (2004). The use of expert judges in scale development: Implications for improving face validity of measures of unobservable constructs. *Journal of Business Research, 57*(2), 98-107.

Harvey, R., & Higgins, S. (2003). Defining fundamentals and meeting expectations: Trends in LIS education in Australia. *Education for Information*, 21(2-3), 149-157. http://hdl.handle.net/10150/105825

Haycock, K. (2007). Education for library and information studies in Canada: A cross-cultural comparison. *New library world*, *108*(1/2), 32-39.

Hildreth, C. R., & Koenig, M. (2002). Organizational realignment of LIS programs in academia: From independent standalone units to incorporated programs. *Journal of Education for Library and Information Science,* 126-133.

Hiller, S., Kyrillidou, M., & Self, J. (2008). When the evidence is not enough: Organizational factors that influence effective and successful library assessment. *Performance Measurement and Metrics*, *9*(3), 223-230.

Horvat, A. (2003). Fragmentation of the LIS curriculum: the case of Croatia. *New Library World*, *104*(6), 227-232. Retrieved from http://www.languagesdirect.co.nz/assets/files/Research_and_Advocacy/Library_Statistics-reflecting_yesterday_today_and_tomorrow-Northumbria_2005.pdf

Jantz, R. C. (2016). *Managing creativity: The innovative research library.* Association of College and Research Libraries, American Library Association.

Kajberg, L., Horvat A., & Oğuz, E.S. (2009). LIS education. In I. Abdullahi (Ed.), *Global Library and Information Science: A Textbook for Students and Educators. With Contributions from Africa, Asia, Australia, New Zealand, Europe, Latin America and the Caribbean, the Middle East, and North America* (Vol. 136). Berlin, Germany: Walter de Gruyter.

Lankes, R. D. (2011). *The atlas of new librarianship. Cambridge.* Massachusetts: MIT Press.

Lawson, J., Kroll, J., & Kowatch, K. (2010). *The new information professional: Your guide to careers in the digital age*. New York: Neal-Schuman Publishers.

Mack, D. (2011). Libraries and museums. In *an Era of Participatory Culture. Salzburg Global Seminar, Session 482 Report*. Retrieved from https://www.salzburgglobal.org/fileadmin/user_upload/Documents/2010-2019/2011/482/SessionReportPrint482.pdf

Malliari, A., & Matousidou, A. (2008). E apopse ton spoudaston tou Tmematos Bibliothekonomias kai Systematon Plerophoreses gia tis proptychiakes spoudes tous [Department of Librarianship and Information Systems student perceptions on their undergraduate studies], paper presented at the 17th Panellenic Academic Libraries Conference, Ioannina Greece, 2008. Retrieved from https://lekythos.library.ucy.ac.cy/handle/10797/11409

Mathews, B. (2014a). Flip the model: Strategies for creating and delivering value. *The Journal of Academic Librarianship, 40*(1) 16–24.

Mathews, B. (2014b). Librarian as futurist: changing the way libraries think about the future. *Portal: Libraries and the Academy*, *14*(3), 453-462.

Mehra, B., Black, K., Singh, V., & Nolt, J. (2011). What is the value of LIS education? A qualitative study of the perspectives of Tennessee's rural librarians. *Journal of Education for Library and Information Science*, 265-278.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). Qualitative data analysis: A Methods Sourcebook. Retrieved from http://www.theculturelab.umd.edu/uploads/1/4/2/2/14225661/miles-huberman-saldana-designing-matrix-and-network-displays.pdf

Moniarou-Papaconstantinou, V., Chatzimari, S., & Tsafou, S. (2005). *Changes in information society, changes in the education of information professionals.* Paper presented at 14th Panhellenic Conference of Academic Libraries, 1-3 December 2005, Athens, Greece. Retrieved from http://eprints.rclis.org/10729/

Moniarou-Papaconstantinou, V., & Tsatsaroni, A. (2008). Library and information science education in Greece: institutional changes and current issues. *Education for Information*, *26*(2), 85-100.

Montague, R., & Steadley, M. (2005). Multifaceted CPD: Developing a program to meet the diverse needs of LIS professionals. In P. Geroni, & G. Walton (Eds.), *Continuing Professional Development - Preparing for New Roles in Libraries: A Voyage of Discovery*, *Sixth World Conference on Continuing Professional Development and Workplace Learning for the Library and Information Professions* (pp. 180-191). IFLA Publications Series. Munich: K.G. Saur.

Mulvaney, P., & O'Connor, D. (2014). Rethinking how we rate and rank MLIS programs. *Library Journal*, *139*(11), 37–40.

Muñoz-Cañavate, A., González, A. C., Hípola, P., & Miranda, E.A.C. (2017). Mailing lists on the internet-a collaboration tool that is still alive: The case of the rediris lists. Paper presented at International Conference on WWW/Internet 2017 and Applied Computing 2017; Vilamoura, Algarve; Portugal; 18-20 October 2017. Retrieved from https://www.researchgate.net/publication/320616691_Mailing_lists_on_the_internet_-_a_collaboration_tool_that_is_still_alive_The_case_of_the_Redlris_lists

Muñoz'Cañavate, A., & Larios'Suárez, V. (2018). Los estudios de Grado en Información y Documentación en España. De los antecedentes a la situación actual: Una visión crítica. *Transinformação*, *30*(3), 336-347.

Myburgh, S. (2003). Education directions for new information professionals. *The Australian Library Journal*, *52*(3), 213-227. Doi: 10.1080/00049670.2003.10721549

Myburgh, S. (2005). *The new information professional: How to thrive in the information age doing what you love.* Oxford United Kingdom: Chandos Publishing.

Mylonas, P. (2017). Sectoral report: Turning Greece into an educational hub. National Bank of Greece. Retrieved from https://www.nbg.gr/greek/the-group/press-office/e-spot/reports/Documents/Education.pdf

Oakleaf, M. (2010). *The value of academic Libraries: A comprehensive research review and report*. Chicago, IL: Association of College and Research Libraries.

Ocholla, D. N. (2008). The current status and challenges of collaboration in library and information studies (LIS) education and training in Africa. *New library world*, *109*(9/10), 466-479.

Ortiz-Repiso, V. (2015). Repensar els estudis de Biblioteconomia i Documentació a Espanya : traspassant els límits. *BiD: Textos universitaris de biblioteconomia i documentació*, núm. 35. Retrieved from http://bid.ub.edu/35/ortiz.htm.

Oyston, E. (Ed.). (2004), Centred on learning: Academic case studies in learning centre development, Aldershot, Hants, England; Burlington, Vt.: Ashgate.

Pacios, A. R. (2015). From the library to the information commons: An approach to the model's development in Spain. *New Library World, 116*(7/8), 345-357. https://doi.org/10.1108/NLW-11-2014-0136

Partridge, H. L., Hanisch, J., Hughes, H. E., Henninger, M., Carroll, M., Combes, B., … Yates, C. (2011). *Re-conceptualising and re-positioning Australian library and information science education for the 21st century* (Final Report 2011). Sydney, NSW: Australian Learning and Teaching Council.

Paulin, D., & Haythornthwaite, C. (2016). Crowdsourcing the curriculum: Redefining e-learning practices through peer-generated approaches. *The Information Society*, *32*(2), 130-142.

Pineau, N. (2011). Nouveaux espaces et nouveaux services. *Bulletin de bibliothèques de France* (BBF), 6, 115-116. Retrieved from http://bbf.enssib.fr/consulter/bbf-2011-06-0115-003

Pruvot, E.B., Estemann, T., & Kupriyanova, V. (2017). Public Funding Observatory Report 2017', European University Association, Brussels, Belgium. Retrieved from https://www.eua.eu/downloads/publications/eua-pfo-report-december-2017.pdf

Red de Bibliotecas Universitarias Españolas (REBIUN). (2003). Centros de Recursos para el Aprendizaje y la Investigación: Un nuevo modelo de biblioteca universitaria, Conferencia de Rectores de las Universidades Españolas, Madrid. https://slideplayer.es/slide/112652/

Sant-Geronikolou, S. (2017). Sempleontas sta nera proptechiakes kai senechizomenes vivliothekonomikes katartises: pros thiamorfose mias atzentas seneryatikes kainotomias [Co-navigating through library science undergraduate curricula and continuing professional development waters: towards the conceptualization of a collaborative innovation agenda]. Paper presented at the 23o Panhellenic Academic Libraries Conference ''Academic Libraries: A roadmap to sustainability", 15-16 November 2017, Aristotle University of Thessaloniki, Greece. Retrieved from http://eprints.rclis.org/31958/

Saunders, L. (2015). Academic libraries' strategic plans: Top trends and under-recognized areas. *The Journal of Academic Librarianship*, *41*(3), 285-291.

Sax, L. J., Gilmartin, S. K., & Bryant, A. N. (2003). Assessing response rates and nonresponse bias in web and paper surveys. *Research in higher education*, *44*(4), 409-432.

Shank, J., Bell, S., & Zabel, D. M. (2011). Blended librarianship: [Re]envisioning the role of librarian as educator in the digital information age. *Reference and User Services Quarterly*, *51*(2), 105-110. https://doi.org/10.5860/rusq.51n2.105

Sinclair, B. (2009). The blended librarian in the learning commons: New skills for the blended library. *College & Research Libraries News*, 70(9), 504-507.

Tammaro, A. M. (2011). Library and Information Science (LIS) education: A conceptual framework towards" Europeisation. *Journal of the Bangladesh Association of Young Researchers*, *1*(1), 1-13.

Tevaniemi, J., Poutanen, J., & Lähdemäki, R. (2015). Library as a partner in co-designing learning spaces: a case study at Tampere University of Technology, Finland. *New Review of Academic Librarianship*, 21(3), 304-324. https://doi.org/10.1080/13614533.2015.1025147

Tsimpoglou, F. (2009). Ethnike politike gia bibliothekes, apousíes, sympleromatikotetes kai ypokatastaseis [National policy for libraries, absences, complementarities and substitutions]. Paper presented at 6th International Conference of the Committee for the Support of Libraries, 11-12 June 2009, French Institute, Athens. Retrieved from https://lekythos.library.ucy.ac.cy/handle/10797/11742

Vassilakaki, E. (2017). New trends in higher education: Can information professionals rise to the challenge? In W. Evans, & D. Baker (Eds.), *The End of Wisdom?* (pp. 119-122). Oxford United Kingdom: Chandos Publishing.

Virkus, S. (2008). LIS education in Europe: Challenges and opportunities. In E. Pipp (Ed.), *Informationskonzepte für die Zukunft: ODOK'07* (pp. 191-204). Graz-Feldkirch Austria: Neugebauer Verlag, GesmbH

Weiner, S. G. (2003). Resistance to change in libraries: Application of communication theories. *Portal: Libraries and the Academy*, *3*(1), 69-78. https://doi.org/10.1353/pla.2003.0022

Wiggins, A., & Sawyer, S. (2012). Intellectual diversity and the faculty composition of iSchools. *Journal of the American Society for Information Science and Technology*, *63*(1), 8-21.

Zins, C., & Santos, P. L. (2017). Content selection in undergraduate LIS education. *Journal of Education for Library and Information Science*, *58*(3), 120-140

Annex 1.

Survey Generic Items

Survey Instrument Generic Items	Question type	Item
Do you plan to work in the LIS sector?	Dichotomous	Q1.1
In which information Science sector do you wish to work in the future?	Multiple-answer multiple choice	Q1.2
Are you thinking of pursuing postgraduate studies?	Dichotomous	Q1.3a
Which specialization?	Open-ended	Q1.3b
How do you stay updated on Information Science developments?	Multiple-answer multiple choice	Q1.4
How do you see the future of academic librarianship?	Open-ended	Q1.5
Which do you think will be the academic librarianship hot topics in the next decade?	Multiple-answer multiple choice	Q1.6
Which seem to be the factors that will mostly affect academic libraries in the future?	Multiple-answer multiple choice	Q1.7

Annex 2.

Topic-specific questions (25 items)

Construct A:

Response Continuum: LIS program adequacy to help librarians cope with the new paradigms

Main items (5 items)

1. Does your program adequately inform you on future job requirements? (5-point Likert) Q2.1
2. Does your program explicitly inform you of the rights and responsibilities associated with your future professional activity? (dichotomous) Q2,16
3. Do you feel the curriculum is consistent with the latest advances in the LIS field? (5-point Likert) Q2.5
4. Do you believe current programs are preparing future information professionals for a more dynamic integration in the educational process? (5-point Likert) Q2.13
5. Is your study program in need of improvement? (dichotomous) Q2.9

Additional Items

a. Which are the program components in need of improvement? (single-answer multiple choice) Q2.3

b. Do you believe your studies have adequately prepared you for… [list of tasks, services, responsibilities] (matrix) Q2.8

c. Which program components do you consider most valuable? (open-ended) Q2.6

d. Which program components do you consider less valuable? (open-ended) Q2.7

e. How do you propose improving the program? (open-ended) Q2.10

Construct B:

Response Continuum: Academic librarianship topic integration in LIS undergraduate programs

Main items (2 items)

1. How would you rate academic librarianship topic integration within LIS study programs today? (5-point Likert) Q2.15
2. Should there be more attention attributed to academic librarianship related topics within LIS curricula? (dichotomous) Q2.14

Additional items:

a. Is there a balance between the theoretical and practical study components? (dichotomous) Q2.2

b. Which type of skills development does your study program move toward? (single-answer multiple choice) Q2.4

c. Rate the following knowledge areas based on importance to your career progress…[list] Q2.22

d. Rate the following knowledge areas based on your knowledge or competence level…[list] Q2.23

e. What is your familiarization degree with the following topics? …[list] Q2.24

Construct C:

Response Continuum: academic Library value -prospects (4 items)

1. How important is the librarian role in Higher Education today? (5-point Likert) Q2.25
2. How optimistic are you around libraries becoming innovation incubating spaces? (3-point Likert) Q2.21
3. Do you think academic libraries can decisively contribute today to reshaping learning? (single-answer multiple choice) Q2.11
4. In your opinion, can university librarians decisively contribute to student success? (single-answer multiple choice) Q2.12

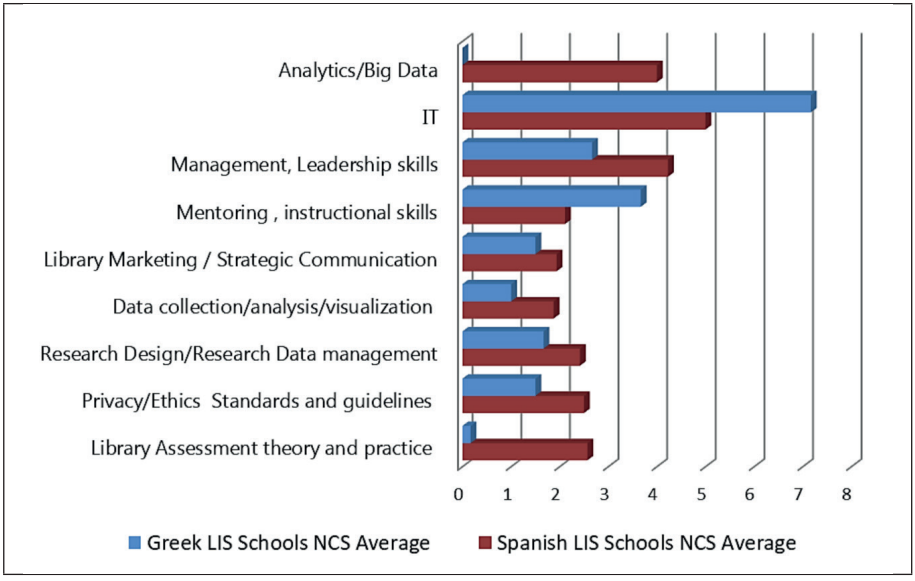
Construct D:

Response Continuum: student Involvement- -Participatory value creation subscale (2 items)/canvassing student opinion subscale (2 items)

1. Does your department provide you with opportunities for involvement in programmatic changes? (dichotomous) Q2.17
2. Does your department provide you with opportunities for involvement in library organizational or operational changes (e.g. through internship or voluntary programs)? (dichotomous) Q2.18
3. Should in-library student activity data (as in service, equipment, study room use, etc.) be more systematically collected? (single-answer multiple choice) Q2.19
4. Should library user perceptions be more systematically investigated? (single-answer multiple choice) Q2.20

Annex 3.

New critical skills-associated course distribution in Greek and Spanish library school curricula



Annex 4.

LIS schools' disciplinary classification table

Greece	
University of West Attica, Department of Archival, Library and Information Studies, Faculty of Management and Economics	Management & Policy
Technological Educational Institute of Thessaloniki, Department of Librarianship and Information Systems, Faculty of Management and Economics	Management & Policy
University of Corfu, Faculty of Information Science & Informatics, Department of Archives, Library science and Museology	Library & Information
Spain	
Universidad Complutense de Madrid. Faculty of Documentation Sciences	Library & Information
Universitat de Barcelona. Faculty of Information and Audiovisual Media.	Transdisciplinary
Universidad de Granada. Faculty of Library and Information Sciences.	Library & Information
Universidad de la Coruña. Faculty of Humanities	Humanities
Universidad de Salamanca. Faculty of Translation and Documentation	Transdisciplinary
Universidad Carlos III de Madrid. School of Humanities, Communication and Library Science, Department of Library and Information Sciences	Transdisciplinary
Universidad de Extremadura. Faculty of Documentation and Communication Sciences, Department of Information and Communication	Transdisciplinary
Universidad de Murcia. Faculty of Communication and Documentation	Transdisciplinary
Universidad de León. Faculty of Philosophy and Letters	Humanities
Universidad de Valencia. Faculty of Geography and History	Social Sciences
Universidad de Zaragoza. Faculty of Philosophy and Letters.	Humanities
Universitat Oberta de Catalunya, Faculty of Information and Communication Sciences	Transdisciplinary

Annex 5.

		Reliability Analysis Likert items (standardized)				
		mean	**sd**	**Cronbach's α**	**Gutmann's λ6**	**Average interitem correlation**
Greek Sample	scale	3.590	0.529	0.682	0.674	0.301
Spanish Sample	scale	3.214	0.543	0.707	0.727	0.326

Annex 6.

	Descriptive Statistics -Spanish Sample Likert items					Descriptive Statistics- Greek Sample Likert items				
	Q2.1	Q2.13	Q2.5	Q2.15	Q2.25	Q2.1	Q2.13	Q2.5	Q2.15	Q2.25
Valid	29	29	29	29	29	41	41	41	41	41
Missing	0	0	0	0	0	0	0	0	0	0
Mean	3.586	2.897	2.966	2.655	3.966	4.000	2.976	3.585	3.171	4.220
Std. Error of Mean	0.1756	0.1744	0.1822	0.1940	0.1889	0.1259	0.1374	0.1258	0.1597	0.1330
Median	4.000	3.000	3.000	3.000	4.000	4.000	3.000	4.000	3.000	4.000
Mode [a]	4.000	2.000	3.000	3.000	4.000	4.000	3.000	4.000	3.000	5.000
Std. Deviation	0.9456	0.9390	0.9814	1.045	1.017	0.8062	0.8800	0.8055	1.022	0.8518
Variance	0.8941	0.8818	0.9631	1.091	1.034	0.6500	0.7744	0.6488	1.045	0.7256
Skewness	-0.1301	0.2175	-0.4144	0.1614	-1.240	-0.3009	0.04887	0.01023	-0.2119	-0.7036
Std. Error of Skewness	0.4335	0.4335	0.4335	0.4335	0.4335	0.3695	0.3695	0.3695	0.3695	0.3695
Kurtosis	-0.7656	-0.5409	0.1524	-0.4356	1.617	-0.6262	0.5885	-0.3848	0.09975	-0.5331
Std. Error of Kurtosis	0.8452	0.8452	0.8452	0.8452	0.8452	0.7245	0.7245	0.7245	0.7245	0.7245
Range	3.000	4.000	4.000	4.000	4.000	3.000	4.000	3.000	4.000	3.000
25th percentile	3.000	2.000	2.500	2.000	4.000	3.000	2.500	3.000	3.000	4.000
50th percentile	4.000	3.000	3.000	3.000	4.000	4.000	3.000	4.000	3.000	4.000
75th percentile	4.000	4.000	4.000	3.000	5.000	5.000	3.000	4.000	4.000	5.000

[a] More than one mode exists, only the first is reported