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# Student Publishing: Future Scholars as Change Agents

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# Student publishing: future scholars as change agents

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## Abstract

**Purpose** – The purpose of this paper is to highlight undergraduates as an emergent student–scholar author group and to encourage institutions to take a future-oriented view, focusing greater attention to and support of undergraduate’s publishing.

**Design/methodology/approach** – Highlighting benefits derived from undergraduate research (UR) experiences and publishing taken from the literature and experienced through local practice (Providence College), presenting pedagogical models for transforming students into independent thinkers (students as scholars) and responding to business and non-profit leader graduate skills requests of higher education, this paper argues for the need to cultivate graduate attributes (requisite 21st century workforce skills, abilities and behaviors), especially graduate demonstrated articulation and communication (publication) skills and abilities.

**Findings** – The conclusions drawn in this paper align with the literatures’ support of derived benefits from UR experiences and its completion through articulation and communication (publication). Final remarks reiterate that critical thinking, complex problem-solving and communication (publication) skills and abilities demonstrate graduate agency and preparedness for meeting 21st century challenges.

**Originality/value** – This paper layers several pedagogical engagement-based teacher–learner models, highlights benefits of undergraduates’ completing the research process through communication (publication) and underscores the importance of cultivating 21st century graduate agency.

**Keywords** Undergraduate research, Graduate agency, Graduate attributes, Students as scholars, Undergraduate publishing

**Paper type** Viewpoint

## Introduction

The advent of digital technologies, the Internet, the World Wide Web and evolving communication channels has provided options for knowledge dissemination of scholarly content through using new tools and platforms. Constrained by traditional disciplinary approaches and institutional tenure, promotion and reward systems, the long-established faculty scholarly communication paradigm has slowed the pace for more general scholarly communication experimentation, innovation and adoption of new knowledge dissemination tools, formats and channels for faculty. The article highlights undergraduates as an emerging student–scholar author group and encourages a future-oriented view of scholarly communication with greater attention to undergraduate publication.

The article is divided into two main parts. Part I presents a brief national history of undergraduate research (UR) and its evolution over that past few decades, models for developing 21st century graduate attributes (e.g. critical thinking, complex problem-solving and communication skills) and growing interest in undergraduate



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publication as a natural completion of the UR experience. Part II then describes Providence College's (PC's) alignment with national educational reform, support for undergraduate publication and the cross-departmental synergy now taking place through the newly established Center for Engaged Learning. Acknowledging academic libraries' expanding role in support of the entire UR and publication process, the article focuses primarily on academic libraries' publishing role and specifically publishing support provided by the Digital Publishing Services (DPS) Department at the Phillips Memorial Library + Commons.

## Part I

UR, graduate attributes and undergraduate publication.

### Integration of research and education

When the Boyer Commission on Educating Undergraduates in Research Universities was formed in 1995, education scholars had already called for a re-examination of then current educational traditions and practices (Katkin, 2003; Merkel, 2001). The Boyer Commission Report issued in 1998 provided an educational reform direction change, recommending greater focus on undergraduate inquiry-based learning and UR experiences. The report encouraged development of an institutional framework that would support inclusion of undergraduates in faculty research, as early as possible. Through faculty–student research engagement, faculty as research mentors would “provide an appropriate balance of challenge and support” (Hodge *et al.*, 2008, p. 11).

Before the Boyer Commission Report, a limited number of faculty–UR programs existed at select research universities (Katkin, 2003; Merkel, 2001). The Massachusetts Institute of Technology (MIT) established the country's first institution-wide program, called the “Undergraduate Research Opportunities Program” (UROP). UROP championed the value of faculty-guided undergraduate entrance into the scholarly community. The California Institute of Technology followed a decade later with its “Summer of Undergraduate Research Fellowships” (SURF) program (Merkel, 2001). Stanford and the University of Delaware followed, shortly thereafter (Bauer and Bennett, 2003).

In support of these institutional initiatives, the National Science Foundation (NSF) established the “Recognition Award for the Integration of Research and Education” (RAIRE). In its press release, NSF envisioned universities with “a pervasive culture promoting collaborative research between professors and students” (National Science Foundation, 1997). Unlike many of the earlier studies and reports, which had a disciplinary focus (Katkin, 2003), the Boyer Commission Report set in motion a re-examination of the role of research universities across the curriculum in preparing:

[...] graduates who are well on the way to being mature scholars, articulate and adept in the techniques and methods of their chosen fields, ready for the challenges of professional life or advanced graduate study (Boyer Commission on Educating Undergraduates in the Research University, S. S. Kenny (chair), 1998, p. 38).

The growing body of literature and anecdotal evidence punctuated by the Boyer Commission Report laid the foundation for cross-institutional pedagogical transformation (one from didactic-based to engagement-based).

**Benefits of UR**

In the early days of developing UR programs, the term “research” predominantly reflected laboratory activities in the Natural Sciences. Highly qualified, highly motivated undergraduates were selected by faculty to participate in an authentic facet or aspect of their own scholarship or research project. Mentored students would contribute original independent scholarship to faculty projects (Merkel, 2001; Case, Davidson University QEP, 2007). Although beginning in the Natural Sciences, UR programs now include support for UR experiences in the Social Sciences and Humanities, as well as discovery through creative inquiry and expression in the Arts. The Council on Undergraduate Research (CUR) currently defines “undergraduate research” as an “inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to the discipline” (Council on Undergraduate Research, CUR, 2013a). This definition is inclusive of all UR experiences across the academy.

Much of the early research supporting the benefits from faculty–student/academic mentor–undergraduate apprentice relationships is based on out-of-class undergraduate summer and academic year research experiences attached to faculty research projects (Hunter *et al.*, 2007). Assessment of these UR programs has been largely ethnographic with faculty and students providing feedback about their experiences (Bauer and Bennett, 2003; Hakim, 1998; Hunter *et al.*, 2007; Manduca, 1997; Wenzel, 2000). Increasingly, the literature identifies benefits from faculty–student engagement and research collaboration. Identified benefits include strengthened inquiry/research skills (Bauer and Bennett, 2003; Kardash, 2000; Lopatto, 2004a, 2004b, 2006; National Survey of Student Engagement, NSSE, 2007); professional socialization or enculturation into a “community of practice” (Hunter *et al.*, 2007; Lave and Wenger, 1991; Wenger, 1998); greater disciplinary knowledge (Ishiyama, 2002); refinement of communication and interpersonal skills (Bauer and Bennett, 2003; Lopatto, 2004a, 2004b, 2006; Seymour *et al.*, 2004; Dunn, 1996; Schapman, 1998); promotion of creativity and critical thinking abilities (Addison, 1996; Ellis, 2006; Hubbard and Ritchie, 1995; Laursen *et al.*, 2012); greater enthusiasm for scholarly pursuits (Khersonskaya, 1998); greater confidence and familiarity with the research process (Alexander *et al.*, 1998; Wolverton, 1998); and benefit to epistemological development (Buckley, 2008; Ryder *et al.*, 1999).

According to a National Survey of Student Engagement (National Survey of Student Engagement, NSSE, 2003), a significant number of undergraduate respondents indicated participation in UR experiences. These included independent studies, capstone courses or membership of a faculty research team. Bauer and Bennett (2003) surveyed alumni as one method to measure “the value added by the UR experience to baccalaureate education” (p. 214), comparing alumni who participated in a UR experience with those who did not. UR participants reported significantly greater perceived growth in their abilities for problem-solving and communicating effectively. These were perceived as important educational gains for alumni pursuing graduate education or entering the professional workforce. The Association of American Colleges and Universities (AACU), in a survey of business and nonprofit leaders, found that an overwhelming percentage of respondents recommend a 21st century liberal education for preparing the future workforce for long-term professional success in today’s global economy. These leaders highly value employee critical thinking, complex problem-solving and written and oral communication abilities and skills (AAC&U,

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2013). Kuh *et al.* (2008), in “High-impact educational practices: what they are, who has access to them, and why they matter”, identified UR as a high-impact activity widely tested and shown to be beneficial for college students. As of the writing of this article (December 2013), the CUR Web site indicates that 900 two-year/four-year colleges and universities are members (Council on Undergraduate Research, CUR, 2013a). This high rate of institutional participation points to recognition of the value and positive impact of UR experiences and to an important pedagogical paradigm shift toward greater faculty–student engagement in higher education.

### 21st century graduate attributes

We continue to transition from an information and communication ecosystem with more clearly defined boundaries and more clearly prescribed interconnections to one that is data-abundant, dynamic, fluid, layered and continuously reconfigurable. In this evolving ecosystem, critical thinking, complex problem-solving and written and oral communication skills and abilities become precious, of the highest value and imperative as a set of demonstrable graduates attributes. These attributes parallel those developed through engagement with the scholarly research process (Ware and Burns, 2008). They are, in fact, attributes of the scholar.

In *From inquiry to discovery: developing the student as scholar in a networked world*, Hodge *et al.* present the “Student as Scholar Model” as an essential educational paradigm shift to meet 21st century challenges. The speakers (authors) state their:

[...] aim [as] not simply to advance UR and creativity, but more importantly, to cultivate the “Student as Scholar,” where scholar is broadly conceived as an attitude, an intellectual posture, and a frame of mind derived from the best traditions of an engaged liberal education (Hodge *et al.*, 2008, p. 2).

Through faculty–student mentorships transition from student to scholar is predicated on the development of self as authority (self-authorship). Students progress in stages from a state of “absolute knowing” (knowledge is certain and authority external) to “contextual knowing” (knowledge is shaped by context and is debatable within that context). Supporting this, student transformation should be a central goal of higher education in the 21st century (Baxter Magolda, 1998; 1999; 2001).

The ability to pose questions in response to challenges; skills to efficiently gather and effectively analyze and evaluate evidence; epistemological sophistication; intellectual integrity and responsibility; and the ability and skills to meaningfully communicate are those of the scholar. These skills, abilities and behaviors match those required by future employers and better position graduates to confidently engage within an evolving and disrupting information/communication ecosystem.

### Completing the research process: undergraduate publication

Increasing numbers of institutions are recognizing “students as producers” (Case, Davidson University QEP, 2007; Neary and Winn, 2009) and expecting some form of communication (written or oral) to accompany and to complete UR activities. Case (2007), Program Director for Davidson College’s Research Initiatives, in a white paper summarizing faculty/student discussions about UR experiences at Davidson, writes:

Davidson faculty and students should share the expectation that their original work will result in a 'product' (e.g. a research article, painting and performance) that will make a contribution to their field of study (Case, Davidson University QEP, 2007, p. 5).

The National Conference on Undergraduate Research (NCUR), established in 1987, dedicated to promoting and celebrating the academic accomplishments of young scholars "across all fields of study" publishes annual proceedings. These proceedings are a collection of papers "representative of the research presented at the annual conference" (National Conference of Undergraduate Research, NCUR Proceedings, 2013). The CUR lists and links to > 100 disciplinary and cross-disciplinary undergraduate journals hosted by colleges and universities worldwide (Council on Undergraduate Research, CUR, 2013b), recognizing student achievement in research and the creative arts. Since 2012, Indonesia's education ministry has required that all undergraduates, graduates and post-graduates publish as a fulfillment of their degree (Rochmyaningsih, 2012). There is clear movement toward recognition of the importance of written and oral communication skills as critical graduate attributes and increased emphasis on undergraduate publication as a key activity for developing these skills.

The literature on the benefits of undergraduates' publishing is scarcer than on the benefits of UR experiences. This is likely due to the fact that new scholarly online publication platforms and communication channels are not much more than a decade old. However, there is literature that points to benefits of students' publishing. Some benefits include communication refinement through feedback and peer-review (Hunter *et al.*, 2007; Rifkin *et al.*, 2010; Walkington, 2008; 2012); recognition and curriculum vitae enhancement – employers and graduate programs recognizing publication as an indicator of skills, abilities and commitment (Brownlow, 1997; Keith-Spiegel and Tabachnick, 1994; Walkington, 2012); confidence and motivation to continue publishing (Walkington, 2012); research literacy and media literacy (Feather *et al.*, 2011; Rifkin *et al.*, 2010; Walkington, 2012); and breadth of scholarly skills, research process completion, public engagement within a disciplinary or general community (Boyer Commission on Educating Undergraduates in the Research University, S.S. Kenny (chair), 1998; Rifkin *et al.*, 2010; Tatalovic, 2008; Walkington, 2008; Walkington and Jenkins, 2008; Ware and Burns, 2008).

In practice, as in all preceding research stages, faculty mentors should model communication (publication) behaviors. Students will have limited, or no previous publication experiences themselves with various communication (publication) styles, priority channels or politics. Form, venue and audience "need to be carefully related to the merit and quality of the work" (Walkington *et al.*, 2013, p. 25). Departmental or institutional publication scaffolding can assist here (e.g. posters, blogs, wikis, multimedia-rich objects, informal and formal papers, UR journals and faculty–student authored articles). Providing publication options for students will help them develop and refine communication (publication) skills for different purposes and different audiences (Rifkin *et al.*, 2010; Walkington, 2008). Unless not meeting institutional degree requirements, all undergraduates can be mentored and fully engaged in the entirety of the research process, including dissemination of their research through various types of publication formats and channels (Walkington *et al.*, 2013).

There is by no means agreement across the academy regarding the benefits of undergraduates' publishing, especially for publishing in undergraduate-only research journals, or about the educational and scholarly value/resource expense proposition



associated with supporting undergraduate publication (Corbyn and Rooney, 2008; Gilbert, 2004; Siegel, 2004). Some argue that the focus of the UR experience should be on teaching only and that if undergraduates publish at all, they would do better to publish in “real” scholarly journals that are included by academic indexing and abstracting services (Gilbert, 2004). The questions raised by academics are of value, although they may to some degree be predicated on traditional educational and scholarly communication paradigms. These paradigms are informed by educational models and print-based processes of evaluation and dissemination, now buckling under the pressures of educational reform and the abundance of information, information formats, information dissemination channels and emerging human/system and author/content value metrics (Jensen, 2007).

Articulation of process and discovery increases understanding and deepens comprehension of conceptually complex subject matter (Rifkin *et al.*, 2010). Taking responsibility for ideas (self-authorship), entering public discourse through various formats and channels will assist undergraduates in meeting career goals. They will become competitive graduate program applicants (Brownlow, 1997; Keith-Spiegel and Tabachnick, 1994) and satisfactorily demonstrate communication skills and abilities to future employers (AAC&U, 2013, Bauer and Bennett, 2003). Institutional responsibility here lies with providing infrastructure and scaffolding for both UR and publication.

### Library as publisher

Partly in response to commercial scholarly journal monopolies and skyrocketing costs, notable scholars and open-access evangelists like Stevan Harnad, as early as 1999, began to encourage a re-examination of scholarly communication practices. Harnad (1999, 2000) encouraged scholars to leverage digital technologies and networks and share their new scholarship immediately and openly through local or disciplinary e-print servers. Scholars in disciplines with pre-print traditions were the first to leverage new technologies and the Internet, creating disciplinary repositories (e.g. arXiv, RePEc and CogPrints). During this time, open-source (e.g. DSpace) and commercial cloud-based (e.g. bepress Digital Commons) institutional repository (IR) systems were being developed. In 2002, Raym Crow published his Scholarly Publishing and Academic Resources Coalition (SPARC) position paper, “The case for institutional repositories”. Crow encouraged the adoption of IRs as a means of both capturing and archiving institutional intellectual output and as a proactive response to publisher monopolistic practices (Crow, 2002).

Since Crow’s publication, academic libraries have implemented a variety of IR and online journal publishing systems (e.g. DSpace, EPrints, bepress, ETD-db, Fedora and Open Journal System) and have developed library publishing services (Mullins *et al.*, 2012) to support institutionally hosted publications. There has been increasing faculty and institutional interest in providing undergraduates with publication platforms and services. As noted earlier, many institutions and faculty are recognizing the value of undergraduate public articulation and are collaborating with libraries to support undergraduate publications (Davis-Kahl *et al.*, 2011; Jones and Canuel, 2013; Miller, 2013). Though library support for undergraduate publication is the focus of the article, it is worth noting that University of South Florida library–faculty member Stamatoplos (2009) has called mentored UR “an emergent pedagogy in higher education” (p. 235). Stamatoplos encourages academic libraries to actively and formally engage with UR

programs. There is an opportunity here for librarians to fully and meaningfully collaborate across the academy at the convergence of UR, information literacy and scholarly communication (Gilman, 2013; Davis-Hahl, 2012; Davis-Kahl and Hensley, 2013; Stamatoelos, 2009).

## Part II

Within the larger context provided by Part I, Part II describes PC's alignment with national pedagogical shifts in higher education and explores emerging campus synergy in support of UR, engaged learning and publishing. As mentioned in Part I, although many academic libraries are providing support across the UR and publication process, with respect to the library's role, Part II focuses on undergraduate publishing support through the Phillips Memorial Library's (PML's) DPS Department.

### A brief history

Founded in 1917, PC is a Catholic predominantly liberal Arts college located in Providence, Rhode Island. PC has a student population made up of approximately 3,800 undergraduates and 700 postgraduate students. Since 2007, PC has been actively encouraging a campus culture supportive of faculty–student research collaboration and undergraduate publication. The College created a standing committee charged with promoting UR; developed library-based digital publishing platforms and services; hired a College grants officer; implemented funding programs for UR and travel; and most recently created a Center for Engaged Learning.

Joining 900 other colleges and universities, PC became a member of the CUR organization in 2007. Demonstrating its institutional commitment to support undergraduate scholarship and creative expression consistent with its strategic plans (Strategic Plan, 2006-2010; 2011-2015), PC has since worked toward establishing a campus culture that supports faculty–student collaboration and student independent studies supervised by faculty mentors. Since joining CUR, College representatives have attended various CUR workshops, events and institutes, namely, CUR/NSF Northeast Regional Workshop on Institutionalizing Undergraduate Research (2008); CUR Dialogues (2009); and most recently, CUR Creative Inquiry in the Arts and Humanities Institute (2013). Since its formation in 2009, the Providence College Undergraduate Research Committee (PC-URC) has been funding UR projects at the College. PC-URC has been proactive in its outreach to all departments and has periodically invited faculty from other institutions to visit PC to share their student collaboration experiences (i.e. faculty including undergraduates in their own research projects).

In 2009, PC received a \$250,000 Davis Educational Foundation award. Davis funds were used to support “student engagement in learning” strategic planning goals (Strategic Plan, 2006-2010). Additionally, as a way of showcasing and celebrating faculty–student collaboration and student-independent research and creativity, the Office of Academic Affairs began sponsoring an annual spring “Celebration of Student Scholarship and Creativity” in 2010. Each year, in preparation for the event, an e-mail is sent to faculty inviting them “to nominate high-quality projects that are or have been under their supervision or direction” (Call for Nominations, 2013). Since 2010, the annual celebration has grown in the number of projects and in campus-wide attendance. Most recently, based on a strategic planning goal (Strategic Plan, 2011-2015), the Center for Engaged Learning was established at PC. The Center's mission is “to promote, enhance,



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and expand the College's efforts to engage students deeply in their learning". The Center's Director is now responsible for oversight and coordination of the annual celebration, assisted by an event steering committee, which includes campus faculty, students and staff.

DPS at the PML, PC, was established in 2007. DPS pursues and investigates new collaborations and publishing models, prioritizing support for local faculty and student scholarship and creative expression (Caprio and Landry, 2013). DPS has developed partnerships with academic departments and individual faculty representing all areas of study at the College (Sciences, Social Sciences, Humanities and Arts) and is currently publishing representative undergraduate capstone and honors theses, honors colloquia papers, a department-supported student-created journal and digital surrogates of senior art show works (studio theses) through its *Digital Commons* and *Content Pro* IRs. Unlike faculty, who has well-established pathways to publication, students have had little opportunity to publish their scholarship through an institutional host (e.g. PC) or other scholarly outlet. Most capstone theses are sequestered in an institution's physical archive with little chance of being read by anyone beyond the project supervisor or supervising committee (*local library circulation statistics demonstrate this to be an accurate assessment*).

Since implementing its *Digital Commons* and *Content Pro* IRs in 2007 and 2010, PC's Phillips Memorial Library + Commons has published increasingly greater numbers of student scholarship and creative expression. With increased visibility and through *Digital Commons'* Search Engine Optimization (SEO), student publications are receiving high numbers of unique views and downloads: the top four theses from one of the oldest community series in the repository receiving 19,898; 18,926; 18,618; and 16,012 downloads, respectively (*usage statistics as of 19/01/2014*). PC students are currently submitting, mainly, traditional forms (digital, but text-based) with few complex (multimedia) digital objects queued for review or publication. That may be due more to faculty preferences than to students' (Rifkin *et al.*, 2010). With growing campus support (equipment, software and staff), the creation of the new MediaHub (facility in the Phillips Memorial Library + Commons supporting the creation and use of new media in education, scholarship and creative expression) and greater outreach, students may begin to explore articulation through new media formats and new communication channels.

### **Toward synergy**

The recent establishment of the Center for Engaged Learning as a College strategic initiative has created a focus for campus conversations about student engagement in learning at PC. In September 2013, the Center's Director invited the Head of DPS, the Chair of the PC-URC and faculty from Foreign Languages Studies to submit a joint application for attendance at a CUR Institute, "Creative Inquiry in the Arts and Humanities". The application was accepted and the PC team (five members) attended the institute from November 8, 2013 to November 10, 2013 at Sacramento State University, Sacramento, CA.

The institute deliverable was a team-created campus-wide action plan, representing short-, medium- and longer-term objectives for expanding UR, scholarship, creativity and its public sharing. The three-day schedule included plenary sessions followed by institutional team breakout sessions. The plenaries presented topics of importance for

advancing UR, scholarship and creativity on college and university campuses (e.g. research on student participation outcomes; models and budgets; internal and external funding sources; and tenure/promotion challenges). Team breakout sessions, informed by preceding plenary presentations, provided respective idiosyncratic campus culture-focused discussions.

Recognizing the value of undergraduate publishing activities, the action plan created by the PC team includes short- and medium-term objectives for greater outreach to faculty and students about Library+Commons publishing platforms (*Digital Commons* and *Content Pro*) and services with a longer-term objective to create an online open-access peer-reviewed undergraduate scholarly journal publishing the results of College-sponsored UR experiences. Increased cross-campus collaboration will help establish a model for greater integration of teaching, learning, research and publishing; and increase opportunities for Library+Commons faculty and staff to introduce emerging digital methodologies, tools and scholarly communication issues to the campus community (Davis-Kahl *et al.*, 2011; Davis-Kahl, 2012; Davis-Kahl and Hensley, 2013; Gilman, 2013; Jones and Canuel, 2013; Miller, 2013; Stamatoplos, 2009).

The DPS Department at the Phillips Memorial Library+Commons continues to evolve informed by advances in technology, changes in scholarly communication and changes in campus needs. DPS continues to remain true to its original mission to investigate new collaborations and publishing models for its community by staying attuned to global patterns, while respecting local idiosyncrasies (Caprio and Landry, 2013). Recognizing undergraduates as an emerging student–scholar author group, DPS has taken a future-oriented view. The department is formally engaged in greater campus wide outreach and allocating greater departmental resources to supporting a wider range of undergraduate publication activities and publication types (e.g. multimedia and text encoding) through the Phillips Memorial Library+Commons infrastructure.

### Conclusions

Digital technologies, the Internet and the World Wide Web have fundamentally and disruptively changed the way we read, write and engage within community. In the past couple of decades, there has been a shift from didactic to engagement-based learning; an increase in the number and type of UR experiences; and increasing support for undergraduate communication (publication). Business leaders are looking to higher education to provide graduates who can think critically, solve complex problems and communicate effectively through traditional and new media. These are outcomes of a liberal education, attributes of the scholar.

In *Pedagogy of the Oppressed*, Freire (1993) explores the narrative characteristics of the traditional teacher–student relationship. In this relationship, the teacher is the narrating “Subject” and the student is the acted upon object. In this scenario, knowledge is available only through the teacher. There is little agency on the part of the student (the object). Freire’s problem-posing method dislodges the teacher as “Subject”, replaced by the problem or question itself as the “Subject”. Teacher and student are together engaged by the problem or question (the “Subject”). In this dialogic space, the teacher can share knowledge and experience, disciplinary methods, tools and vocabularies; the student, fully and directly engaged with the problem or question, can share knowledge,

experience and expertise. Teaching and learning become dynamic, fluid and interchangeable (teacher can become learner; learner can become teacher).

It is through a dialogic learning and writing space (Walkington, 2012), team-mentored by all campus stakeholders (e.g. faculty, librarians and administrators), that students will experience an authentic and complete research process, informed and capable of agency. Public articulation of ideas is an integral part of the research process for undergraduates. Without communication there is no community-developed knowledge base. It is through public expression, giving form to insights and discoveries that their meaning is reflected back (heard by the author) and heard within the community. When shared, ideas are re-formed and inspire new ideas, new questions or new knowledge. Transformed into scholars, encouraged and supported to write publically through traditional and new media, engaged within disciplinary or general communities, graduates will be equipped to meet 21st century challenges and to fully participate in the transformation of their communities.

### References

- Addison, W.E. (1996), "Student research proposals in the experimental psychology course", *Teaching of Psychology*, Vol. 23 No. 4, pp. 237-238.
- Alexander, B.B., Foertsch, J. and Daffinrud, S. (1998), "The spend a summer with a scientist program: an evaluation of program outcomes and the essential elements for success", University of Madison-Wisconsin LEAD Center, available at: <http://wceruw.org/publications/LEADcenter/sas.pdf> (accessed 12 December 2013).
- Bauer, K.W. and Bennett, J.S. (2003), "Alumni perceptions used to assess undergraduate research experience", *The Journal of Higher Education*, Vol. 74 No. 2, pp. 210-230.
- Baxter Magolda, M.B. (1998), "Developing self-authorship in young adult life", *Journal of College Student Development*, Vol. 39 No. 2, pp. 143-156.
- Baxter Magolda, M.B. (1999), *Creating Contexts for Learning and Self-Authorship: Constructive Developmental Pedagogy*, Vanderbilt University Press, Nashville, TN.
- Baxter Magolda, M.B. (2001), *Making Their Own Way: Narratives for Transforming Higher Education to Promote Self-Development*, Stylus, Sterling, VA.
- Boyer Commission on Educating Undergraduates in the Research University, S.S. Kenny (chair) (1998), "Reinventing undergraduate education: a blueprint for America's research universities", State University of New York – Stony Brook, available at: <http://eric.ed.gov/?id=ED424840> (accessed 5 November 2013).
- Brownlow, S. (1997), "Going the extra mile: the rewards of publishing your undergraduate", *Psi Chi Journal of Undergraduate Research*, Vol. 2 No. 3, pp. 83-85.
- Buckley, J.A. (2008), "The disciplinary effects of undergraduate research experiences with faculty on selected student self-reported gains", paper presented at the Annual Meeting of the Association for the Student of Higher Education, Jacksonville, FL, 6-8 November, available at: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.169.6194&rep=rep1&type=pdf> (accessed 30 December 2013).
- Caprio, M.J. and Landry, C.M. (2013), "Publishing Inti: a suite of services", in Brown, A. (Ed.), *Library Publishing Toolkit*, IDS Project Press, Geneseo, NY, pp. 161-170.
- Case, V. (2007), "The future of undergraduate research, creative scholarship, and in-depth studies at Davidson College", available at: [www.academia.edu/4166612/The\\_Future\\_of\\_Undergraduate\\_Research\\_Creative\\_Scholarship\\_and\\_In-depth\\_Studies\\_at](http://www.academia.edu/4166612/The_Future_of_Undergraduate_Research_Creative_Scholarship_and_In-depth_Studies_at) (accessed 5 December 2013).

- Corbyn, Z. and Rooney, M. (2008), "Let students enjoy the power of print", *Times Higher Education*, available at: [www.timeshighereducation.co.uk/403119.article](http://www.timeshighereducation.co.uk/403119.article) (accessed 11 December 2013).
- Council on Undergraduate Research (CUR) (2013a), "About CUR", available at: [www.cur.org/about\\_cur/](http://www.cur.org/about_cur/) (accessed 13 December 2013).
- Council on Undergraduate Research (CUR) (2013b), "Undergraduate journals and publications", available at: [www.cur.org/resources/students/undergraduate\\_journals/](http://www.cur.org/resources/students/undergraduate_journals/) (accessed 13 December 2013).
- Crow, R. (2002), "The case for institutional repositories: a SPARC position paper", discussion paper, scholarly publication and academic resources coalition, Washington, DC, available at: [http://works.bepress.com/ir\\_research/7/](http://works.bepress.com/ir_research/7/) (accessed 8 February 2014).
- Davis-Kahl, S. (2012), "Engaging undergraduates in scholarly communication outreach, education, and advocacy", *College and Research Libraries News*, Vol. 73 No. 4, pp. 212-222.
- Davis-Kahl, S. and Hensley, M.K. (2013), "Common ground at the nexus of information literacy and scholarly communication", Association of College and Research Libraries, available at: [www.ideals.illinois.edu/bitstream/handle/2142/42666/CommonGround\\_OA.pdf?sequence=2#page=6](http://www.ideals.illinois.edu/bitstream/handle/2142/42666/CommonGround_OA.pdf?sequence=2#page=6) (accessed 31 December 2013).
- Davis-Kahl, S., Hensley, M. and Shreeves, S. (2011), "Completing the research cycle: the role of libraries in the publication and dissemination of undergraduate student research", Association of College and Research Libraries, Fifteenth National Conference, Philadelphia, PA, March, available at: [http://works.bepress.com/stephanie\\_davis\\_kahl/18](http://works.bepress.com/stephanie_davis_kahl/18) (accessed 31 December 2013).
- Dunn, D.S. (1996), "Collaborative writing in a statistics and research methods course", *Teaching of Psychology*, Vol. 23 No. 1, pp. 38-40.
- Ellis, A.B. (2006), "Creating a culture for innovation", *The Chronicle Review*, available at: <http://chronicle.com/weekly/v52/i32/32b02001.htm> (accessed 14 January 2014).
- Freire, P. (1993), *Pedagogy of the Oppressed*, Continuum, New York, NY.
- Feather, D., Anchor, J.R. and Cowton, C.J. (2011), "The value of the undergraduate dissertation: perceptions of supervisors", paper presentations of the 2010 University of Huddersfield Annual Learning and Teaching Conference, University of Huddersfield, Huddersfield, pp. 41-56, available at: <http://eprints.hud.ac.uk/9655/> (accessed 29 November 2013).
- Gilbert, S. (2004), "Should students be encouraged to publish their research in student-run publications? A case against undergraduate-only journal publications", *Cell Biology Education*, Vol. 3 No. 1, pp. 22-23.
- Gilman, I. (2013), "Scholarly communication for credit: integrating publishing education into undergraduate curriculum", in Davis-Kahl, S. and Hensley, M.K. (Eds), *Common Ground at the Nexus of Information Literacy and Scholarly Communication*, Association of College and Research Libraries, Chicago, available at <http://commons.pacificu.edu/cgi/viewcontent.cgi?article=1021&context=libfac> (accessed 31 December 2013).
- Hakim, T. (1998), "Soft assessment of undergraduate research: Reactions and student perspectives", *Council on Undergraduate Research Quarterly*, Vol. 18 No. 4, pp. 189-192.
- Harnad, S. (1999), "Free at last: the future of peer-reviewed journals", *D-Lib Magazine*, Vol. 5, No. 1, available at: [www.dlib.org/dlib/december99/12harnad.html](http://www.dlib.org/dlib/december99/12harnad.html) (accessed 8 February 2014).
- Harnad, S. (2000), "E-Knowledge: freeing the refereed journal corpus online", *Computer Law and Security Report*, Vol. 16 No. 2, pp. 78-87, available at: [www.cogsci.soton.ac.uk/~harnad/Papers/Harnad/harnad00.scinejm.htm](http://www.cogsci.soton.ac.uk/~harnad/Papers/Harnad/harnad00.scinejm.htm) (accessed 8 February 2014).

- Hodge, D., Haynes, C., LePore, P., Pasquesi, K. and Hirsh, M. (2008), "From enquiry to discovery: developing the student as scholar in a networked world", keynote address at Learning Through Enquiry Alliance Inquiry in a Networked World Conference, University of Sheffield, 25-27 June, available at: [www.miami.muohio.edu/documents/about-miami/president/reports-speeches/From\\_Inquiry\\_to\\_Discovery.pdf](http://www.miami.muohio.edu/documents/about-miami/president/reports-speeches/From_Inquiry_to_Discovery.pdf) (accessed 21 November 2013).
- Hubbard, R.W. and Ritchie, K.L. (1995), "The human subjects review procedure: an exercise in critical thinking for undergraduate experimental psychology students", *Teaching of Psychology*, Vol. 22 No. 1, pp. 64-65.
- Hunter, A.B., Laursen, S.L. and Seymour, E. (2007), "Becoming a scientist: the role of undergraduate research in students' cognitive, personal, and professional development", *Science Education*, Vol. 91 No. 1, pp. 36-74.
- Ishiyama, J. (2002), "Does early participation in undergraduate research benefit social science and humanities students?", *College Student Journal*, Vol. 36 No. 3, pp. 380-387.
- Jensen, M. (2007), "Authority 3.0: friend or foe to scholars?", *Journal of Scholarly Publishing*, Vol. 39 No. 1, pp. 297-307.
- Jones, J. and Canuel, R. (2013), "Supporting the dissemination of undergraduate research: an emerging role for academic librarians", in Mueller, D.M. (Ed.), *Imagine, Innovate, Inspire: Proceedings of the Association of College and Research Libraries Conference*, Association of College and Research Libraries, Chicago, IL, pp. 538-545, available at: [www.ala.org/acrl/sites/ala.org.acrl/files/content/conferences/confsandpreconfs/2013/papers/JonesCanuel\\_Supporting.pdf](http://www.ala.org/acrl/sites/ala.org.acrl/files/content/conferences/confsandpreconfs/2013/papers/JonesCanuel_Supporting.pdf) (accessed 9 December 2013).
- Kardash, C.M. (2000), "Evaluation of an undergraduate research experience: perceptions of undergraduate intern and their faculty mentors", *Journal of Educational Psychology*, Vol. 92 No. 1, pp. 191-201.
- Katkin, W. (2003), "The Boyer commission report and its impact on undergraduate research", *New Directions For Teaching and Learning*, Vol. 2003 No. 93, Spring, pp. 19-38.
- Keith-Spiegel, P. and Tabachnick, B. (1994), "When demand exceeds supply: second-order criteria used by graduate school selection committees", *Teaching Of Psychology*, Vol. 21 No. 2, pp. 79-81.
- Khersonskaya, M.Y. (1998), "Impressions and advice about making an undergraduate research presentation", *Journal of Psychological Inquiry*, Vol. 3, pp. 50-51, available at: [www.fhsu.edu/psych/jpi/](http://www.fhsu.edu/psych/jpi/) (accessed 11 December 2013).
- Kuh, G.D. (2008), "High-impact educational practices: what they are, who has access to them, and why they matter", AAC and U, Washington, DC, available at: [/www.neasc.org/downloads/aacu\\_high\\_impact\\_2008\\_final.pdf](http://www.neasc.org/downloads/aacu_high_impact_2008_final.pdf) (accessed 30 December 2013).
- Laursen, S., Seymour, E. and Hunter, A.B. (2012), "Learning, teaching and scholarship: fundamental tensions of undergraduate research", *Change: The Magazine of Higher Learning*, Vol. 44 No. 2, pp. 30-37.
- Lave, J. and Wenger, E. (1991), *Situated Learning: Legitimate Peripheral Participation*, Cambridge University Press, Cambridge, MA.
- Lopatto, D. (2004a), "Survey of undergraduate research experiences (SURE): first findings", *Cell Biology Education*, Vol. 3 No. 4, pp. 270-277.
- Lopatto, D. (2004b), "What undergraduate research can tell us about research on learning", available at: [http://web.grinnell.edu/science/ROLE/Presentation\\_2004\\_CUR\\_annual\\_meeting\\_WI.pdf](http://web.grinnell.edu/science/ROLE/Presentation_2004_CUR_annual_meeting_WI.pdf) (accessed 3 January 2014).



- Lopatto, D. (2006), "Undergraduate research as a catalyst for liberal learning", *Peer Review*, Vol. 8 No. 1, pp. 22-25.
- Manduca, C. (1997), "Broadly defined goals for undergraduate research projects: a basis for program evaluation", *Council on Undergraduate Research Quarterly*, Vol. 18 No. 2, pp. 64-69.
- Merkel, C.A. (2001), "Undergraduate research at six research universities", CA Institute of Technology, Pasadena, CA, available at: [www.aau.edu/workarea/downloadasset.aspx?id=1900](http://www.aau.edu/workarea/downloadasset.aspx?id=1900) (accessed 3 January 2014).
- Miller, C. (2013), "Riding the wave: open access, digital publishing, and the undergraduate thesis", Pomona Faculty Publications and Research, Paper 377, available at: [http://scholarship.claremont.edu/pomona\\_fac\\_pub/377](http://scholarship.claremont.edu/pomona_fac_pub/377) (accessed 13 December 2013).
- Mullins, J.L., Murray-Rust, C., Ogburn, J.L., Crow, R., Ivins, O., Mower, A., Nesdill, D., Newton, M.P., Speer, J. and Watkinson, C. (2012), "Library publishing services: strategies for success", final research report, SPARC, Washington, DC, available at: [http://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1023&context=purduepress\\_ebooks](http://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1023&context=purduepress_ebooks) (accessed 8 February 2014).
- National Conference of Undergraduate Research (NCUR). (2013), *NCUR Proceedings*, available at: [www.ncurproceedings.org](http://www.ncurproceedings.org) (accessed 22 December 2013).
- National Science Foundation (1997), "Recognition award for the integration of research and education" (RAIRE Press Release), available at: [www.nsf.gov/news/news\\_summ.jsp?cntn\\_id=102824](http://www.nsf.gov/news/news_summ.jsp?cntn_id=102824) (accessed 25 November 2013).
- National Survey of Student Engagement (NSSE) (2003), "Converting data into action: expanding the boundaries of institutional improvement", Center for Postsecondary Research, Bloomington, IN, available at: [http://nsse.iub.edu/2003\\_annual\\_report/pdf/NSSE\\_2003\\_Annual\\_Report.pdf](http://nsse.iub.edu/2003_annual_report/pdf/NSSE_2003_Annual_Report.pdf) (accessed 4 January 2014).
- National Survey of Student Engagement (NSSE). (2007), "Experiences that matter: enhancing student learning and success", Center for Postsecondary Research, Bloomington, IN, available at [http://nsse.iub.edu/nsse\\_2007\\_annual\\_report/](http://nsse.iub.edu/nsse_2007_annual_report/) (accessed 4 January 2014).
- Neary, M. and Winn, J. (2009), "The student as producer: reinventing the student experience in higher education", in Neary, M., Stevenson, H. and Bell, L. (Eds), *The Future of Higher Education: Pedagogy, Policy and the Student Experience*, Continuum, London, pp. 126-138.
- Rifkin, W., Longnecker, N., Leach, J. and Davis, L.S. (2010), "Students publishing in new media: eight hypotheses – a house of cards?", *IJISME*, Vol. 18 No. 1, pp. 43-54.
- Rochmyaningsih, D. (2012), "Indonesia makes research publication a graduation requirement for all students", *Asian Scientist*, available at: [www.asianscientist.com/academia/indonesia-dikti-aptisi-publication-a-graduation-requirement-for-all-students-2012/](http://www.asianscientist.com/academia/indonesia-dikti-aptisi-publication-a-graduation-requirement-for-all-students-2012/) (accessed 8 December 2013).
- Ryder, J., Leach, J. and Driver, R. (1999), "Undergraduate science students' images of science", *Journal of Research in Science Teaching*, Vol. 36 No. 2, pp. 201-219.
- Schapman, A.M. (1998), "Tips for presenting a poster", *Journal of Psychological Inquiry*, Vol. 3, pp. 53.
- Seymour, E., Hunter, A.B., Laursen, S.L. and Deantoni, T. (2004), "Establishing the benefits of research experiences for undergraduates in the sciences: first findings from a three-year study", *Science Education*, Vol. 88 No. 4, pp. 493-534.



- 
- Siegel, V. (2004), "Should students be encouraged to publish their research in student-run publications? Weighing the pros and cons of undergraduate-only journal publications", *Cell Biology Education*, Vol. 3 No. 1, pp. 26-27.
- Stamatoplos, A. (2009), "The role of academic libraries in mentored undergraduate research: a model of engagement in the academic community", *College and Research Libraries*, Vol. 70 No. 3, pp. 235-249.
- Tatalovic, M. (2008), "Student science publishing: an exploratory study of undergraduate science research journals and popular science magazines in the US and Europe", *JCOM*, Vol. 7 No. 3, p. A03, available at: <http://jcom.sissa.it/archive/07/03> (accessed 18 November 2013).
- Walkington, H. (2008), "Geoverse: piloting a national e-journal of undergraduate research in Geography", *Planet*, Vol. 20, pp. 41-46.
- Walkington, H. (2012), "Developing dialogic learning space: the case of online undergraduate research journals", *Journal of Geography in Higher Education* Vol. 36 No. 4, pp. 547-562.
- Walkington, H. and Jenkins, A. (2008), "Embedding undergraduate research publication in the student learning experience", *Brookes eJournal of Learning and Teaching*, No. 20, available at: [http://bejlt.brookes.ac.uk/paper/embedding\\_undergraduate\\_research\\_publication\\_in\\_the\\_student\\_learning\\_experi-2/](http://bejlt.brookes.ac.uk/paper/embedding_undergraduate_research_publication_in_the_student_learning_experi-2/) (accessed 23 November 2013).
- Walkington, H., Edwards-Jones, A. and Grestly, K. (2013), "Strategies for widening students' engagement with undergraduate research journals", *Council on Undergraduate Research Quarterly (From the International Desk)*, Vol. 34 No. 1, pp. 24-30.
- Ware, M.E. and Burns, S.R. (2008), "Undergraduate student research journals: opportunities for and benefits from publication", in Miller, R.L., Rycek, R.F., Balcetis, E., Barney, S.T., Beins, B.C., Burns, S.R. and Ware, M.E. (Eds), *Developing, Promoting and Sustaining the Undergraduate Research Experience in Psychology*, Society for the Teaching of Psychology, Washington, DC, pp. 253-256, available at: <http://scoes.ccsu.edu/uploaded/departments/AcademicDepartments/psychology/Mealy/UndergradResearchJournalsArticle.pdf> (accessed 2 December 2013).
- Wenger, E. (1998), *Communities of Practice: Learning, Meaning and Identity*, Cambridge University Press, Cambridge, MA.
- Wenzel, T.J. (2000), "Undergraduate research as a capstone learning experience", *Analytical Chemistry*, Vol. 72 No. 15, pp. 547A-549A.
- Wolverton, A.S. (1998), "Establishing an ideal program of research", *Journal of Psychological Inquiry*, Vol. 3, pp. 49-50.

### Further reading

- AAC, U. (2007), "College learning for the new global century", available at: [www.aacu.org/leap/documents/GlobalCentury\\_final.pdf](http://www.aacu.org/leap/documents/GlobalCentury_final.pdf) (accessed 5 December 2013).

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