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Undergraduate research journals and career readiness

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Undergraduate Research Journals and Career Readiness

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the Faculty of the Undergraduate

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Abstract

This research aims to identify the effects that an undergraduate research journal, specifically the James Madison Undergraduate Research Journal (*JMURJ*), has on its past and present student editors' career readiness. I began by exploring the existing literature surrounding undergraduate research, undergraduate research journals, and other studies done to measure the effects that these undergraduate research journals have on students at various institutions. Then, I conducted a survey on current and past members of the *JMURJ* editorial board, using a specific set of questions to determine if an undergraduate research journal such as the one at James Madison University was assisting/had already assisted students in recognizing their career skillsets. Using the feedback from this survey, I was able to identify common trends and their implications, as well as potential limitations to this study. Due to the highly specific nature of undergraduate research journals and their localized environments, the methodology used for this research is not meant to be replicated by other journals, but rather used as a resource for the current editorial board members of *JMURJ*. The current study also serves as a current assessment of how and how well the *JMURJ* approach serves students as an undergraduate research journal, so that it can be of use to *JMURJ*, other board members and journals, and to other universities committed to undergraduate research.

Keywords: research, journals, undergraduates, skillsets, career, assessment

Introduction

There is no question that the research performed during students' undergraduate years at any institution is a vital aspect in educating and preparing them for professional careers. This research can take place inside or outside of the classroom, in the form of research papers, laboratory courses, capstone projects, one-on-one mentorships, or even on the students' own personal agenda. Whatever the format, this research can help to shape students in their academic fields as well as professionally, and should aim to contribute to students' post-graduate career readiness.

James Madison University has a specific course dedicated to publishing research from undergraduates, whether it is strictly text-based or a multi-media project. The *James Madison Undergraduate Research Journal* (JMURJ) is, as stated on its website, a "multidisciplinary, multimedia, student-run, peer-reviewed academic journal" that has a mission of "promoting, publishing, and sharing excellent scholarship, research, and intellectual work by undergraduate students across James Madison University" ("Mission, Goals, and Scope," 2017, para. 1-2). The journal's idea was conceived in the Fall of 2007 from a model designed by JMU undergraduates Casey Boutwell and Laurence Lewis, who were both physics majors. They envisioned the journal as "a community of ambitious, open-minded student-researchers" ("JMURJ: Publishing History," 2017) and designed and established a model during the Spring of 2018 for how they thought an undergraduate research journal should operate—with multidisciplinary collaboration, faculty support, student administration, and publication opportunities.

The original *JMURJ* model was just one of the many student-run, peer-reviewed approaches that other colleges and universities around the country use, such as *Anthos* by Portland State University or the *Caravel Undergraduate Research Journal* by the University of

South Carolina for their undergraduate research journals. In the Spring of 2009, the first team of editors published a single issue of *JMURJ*; however, the journal discontinued in the years between 2009 and 2013 due to a lack of student participation. In Spring of 2013, the journal's effort was revitalized through JMU's Honors College, which contacted members of the Honors Faculty Fellows to see if any of its members would be interested in overseeing the effort. Faculty in JMU's School of Writing, Rhetoric and Technical Communication (WRTC), Kevin Jefferson and Scott Lunsford, then chose to take up the endeavor as the journal's faculty advisors. This revitalization became a pivotal aspect in how the journal recruited future editorial board members, as the journal could then recruit Honors students through their JMU e-mails to take the course for Honors credit, thus continuing the journal's effort and making it a self-sustaining outlet for student research. The members of the Spring 2013 journal, all honors students, began redefining the mission, scope, and review process of *JMURJ* for future years.

With the Honors College's addition of "areas of emphasis" to its program, students then had the ability to take the *JMURJ* course to fulfill course requirements in the areas of Global Studies, Leadership, Creativity and Innovation, Research, or Service and Civic Engagement. The option to take the course for area of emphasis credit is just one example of how the undergraduate research journal's editorial board is able to tailor the course towards whatever the students wish to gain from the experience, as well as respect the talents and initiative that each individual brings. For example, students in the Leadership area of emphasis could choose to take the course to advance their definition of leadership and discover the role of teamwork and responsibilities that are integral to an academic publishing process. Students in the Research area of emphasis could choose to take the *JMURJ* course to improve their research skills, as it can foster the students' ability to recognize the caliber of research that is required for a specific peer-

reviewed journal, and how to craft their own research to a more professional standard as well. Students in the Creativity and Innovation area of emphasis could focus their efforts on the design aspects of the journal.

Another way that students are able to tailor their *JMURJ* experience toward their educational or career goals is through the different teams that the editorial board offers—the editing team, the marketing and outreach team, and the design team. These teams allow students to focus their efforts within the journal wherever their talents lie, and to further develop skills relevant to their specific team. The marketing team, for example, "collaborates with university stakeholders, develops publicity initiatives, and creates funding opportunities" for the journal, while the design team uses software platforms such as Adobe Creative Cloud to design layouts and artwork for online and printed publications ("Join the JMURJ Editorial Board," 2017). The editing team is tasked with "comprehensively editing text- and media-based submissions from disciplines across the university, collaborating with undergraduate researchers and scholars, and coordinating the efforts of faculty reviewers" ("Join the JMURJ Editorial Board," 2017). Each team must rely on another to ensure the best quality of work becomes published, and that effort typically begins with the marketing and outreach team's efforts to advertise *JMURJ* around campus for students to submit their research, which eventually leads to the design team's final touches on the latest volume's layout.

The journal has invited stakeholders from departments all over campus to participate in its editorial process, from student authors to faculty reviewers, and in the 2015-2016 academic year, *JMURJ* enlisted its 100th faculty reviewer. The reason for the extensive involvement of faculty members throughout campus is a part of the journal's "double-blind peer review process," to ensure that the research is "appropriate, accurate, and complete" for JMU's diverse

academic audience ("JMURJ: Publishing History," 2017). Because *JMURJ* accepts submissions from any academic department on campus, the role of faculty reviewers is to provide their own disciplinary expertise and affirm that students' submissions represent the caliber of work that is expected from their field. The *JMURJ* editorial board works with these faculty members as needed, as well as the authors of submissions through e-mail correspondence.

In addition to working with faculty members, the members of each team work closely together to accomplish their specific tasks, as well as work collaboratively with the other teams throughout the publishing process. Because of the journal's fine-tuned screening process that involves everyone in the course, each student is involved in a research process of his/her own— determining where a manuscript falls in the review process (if it should be accepted, accepted pending revisions, or outright rejected), what about it could be improved, and what faculty would be best suited to give feedback on a particular piece. All students in the course must conduct research in order to accomplish these tasks, and this practical and instrumental academic exercise is what makes the journal a venue to perform as well as publish research.

As someone who has had experience working on the editing team with *JMURJ*, I found that it greatly enhanced my skills as a writer, communicator, editor, researcher, and collaborator. Reading through the various, multidisciplinary manuscripts that were submitted to the journal, I was familiarized with how to screen submissions in their preliminary stages for accessibility, methodology, organization, cohesion, and readability. Much of the communication to students is centered on the screening document that is used to ensure the highest quality of scholarship is shown in each of the journal's publications, as it lists a series of questions that allows editors better assess a manuscript for its higher-order concerns under the aforementioned stages ("JMURJ Screening Criteria, 2016; Appendix A): under methodology, for example, we asked,

"Is it clear that there is a purpose that leads to a discovery or that there is an application of knowledge?" To assess the manuscript's accessibility, we asked, "Considering the multidisciplinary audience, does the submission as a whole avoid or limit unnecessarily complex or difficult discipline-specific language?" As new editorial board members join at the beginning of each semester, they are given "trial screenings" of old manuscripts under the instruction of the faculty advisors, in order to practice this skill. I became much more competent in assessing a submission's needs as our screening teams completed these documents throughout the semester, which also contributed to my experience in collaboration.

I frequently consulted other peer editors for their expertise throughout the course, and learned the importance of asking questions when I lacked knowledge in an area, whether it be with reviewing the content of a paper and how to address its individual needs during the screening process, corresponding with student authors about higher order concerns like sourcing, organization, and accessibility, or editing the sentence-level errors in manuscripts. I believe it is the peer collaboration between team and board members, student writers, as well as JMU faculty that influenced my time with *JMURJ* the most, as it allowed for an assimilation of knowledge far surpassing any of my classroom experiences.

Because I am also an Honors student with a Leadership area of emphasis, I was also tasked with leading the newest members of the editorial board, providing them with advice on *JMURJ* best practices, and getting them acclimated to the journal's editing process as quickly as possible, in addition to my general editing team duties. I combined my Leadership area of emphasis with my career goal of becoming an editor to tailor the course to my professional needs and aspirations. As a future editor, I wanted to further harness this skill and my command for language, which was reinforced from the preliminary screening done in groups down to the

sentence-level copyediting and fact-checking done in my role on the editing team. My leadership skills were then reinforced by providing direction to the newer members of the editorial board, specifically with getting them used to our screening criteria, the language that was appropriate to use when communicating with students and faculty, as well as individual tasks that other board members were struggling with. After the three semesters that I took the *JMURJ* course, I can now advertise these skills and my personal editing and leadership experience with the journal to potential employers after I graduate.

My own experience with the journal sparked my interest in conducting a survey to explore whether or not other students take the *JMURJ* course with the same intention of gaining skills for the professional world. Furthermore, I was curious to assess how well the journal prepared these students for their future career goals, and what skills in particular they felt had benefited from their individual participation in the course. I administered a survey to the current/past participants of the journal to answer these questions: How can the undergraduate research journal experience at JMU, particularly *JMURJ*, help prepare its student editors for their future career goals? Are there specific skills that this journal facilitates in its editors that contribute to their career readiness, and what class activities contributed to these skills?

It is important to note that the term "career readiness" is based on the core competencies set forth by the National Association of Colleges and Employers, although some competencies did not seem as applicable to the nature of the *JMURJ* course as others. In addition, while the assessment of a journal's effectiveness in strengthening students' individual skillsets is a critical component to its success, each undergraduate research journal is a product of its environment. The *JMURJ* course is tailored specifically to the needs of its affiliated community and its students; therefore, the findings in this research may not be applicable to another undergraduate

research journals, and the methods used to construct this survey not necessarily replicable. The goal of this research, then, is to evaluate how well the *JMURJ* approach assists students in recognizing their professional skillsets as well as advances them. In addition, it serves as a current assessment of how and how well the *JMURJ* approach serves students as an undergraduate research journal, so that it can be of use to current board members of *JMURJ*, to the *JMURJ* journal itself, other board members and journals, and to a university committed to undergraduate research.

Review of Literature

My individual involvement with the *James Madison Undergraduate Research Journal* and its impact on my own personal development initially piqued my interest as to how this kind of student-run, peer-reviewed journal could impact other students in their professional growth. However, in order to conduct any amount of research on this specific journal at James Madison University, I first needed to examine any underlying research done on the undergraduate research experience in other higher education facilities. Then, I looked into the specific research processes and approaches that other organizations have undertaken in order to cultivate student development, and how these processes could be further empowered by the dissemination of student research as a research experience in itself. Lastly, I inquired about the various skills that employers wish to see in their college graduates, and how they could potentially coincide with the competencies students gain from their experience with an undergraduate research journal. The research done in existing literature would then shape my own study of how *JMURJ* has fostered professional development in its past and existing editorial board members.

The study of how undergraduate research affects students and their professional growth inside and outside of their accredited universities has become important to students and faculty alike over the years. Research, which can be defined as "asking questions and finding out answers (and discovering debates about these answers and how to interpret them)" (Wisker, 2009, p. 8) can be done individually or collaboratively, and inside or outside of the classroom. Gina Wisker (2008) addresses the importance of student research in higher education in her book, *The Undergraduate Research Handbook*, which describes the important role of students as contributors of knowledge. Research skills build off of an inquiry about the world and its construction, and can transform the way people think about their surroundings as well as how

they go about obtaining/sharing knowledge (p. 3). Therefore, it is important to develop and cultivate research skills, preferably before one enters the professional world.

Involvement in research processes, such as "classroom undergraduate research experiences" ("CUREs" for short) can also show increases in research productivity, undergraduate student involvement, and productivity outputs in participants. The confirmed course-related student outcomes of CUREs included "increased self-efficacy, external validation, persistence in science, and career clarification" (Kowalski, Hoops, & Johnson, 2016). In other words, students were not only professionalizing themselves in their designated project areas with their research, but clarifying their choice in future career paths as well. Students' experience with undergraduate research has also been linked to "heightened graduate school performance in all research skills assessed," skills such as autonomy, collaboration, motivation, and duration (Gilmore, Vieyra, Timmerman, Feldon, & Maher, 2015; Metcalfe, Gibson, & Lambert, 2010).

Some other models that have been designed to enhance undergraduate research experiences are the scaffolding approach, collaborative approaches, and student-driven research projects. These different approaches vary mostly in their degree of student autonomy, and the results of these research experiences are often supported with self-reports or faculty surveys (Kardash, 2000; Manarin, McGrath, & Carey, 2016). Kardash (2000) relies on science interns' self-evaluations to study the development of research skills in UREs (undergraduate research experiences), in which she asserts that "These data reveal that students enjoy the attention of faculty, the intellectual challenge of research, and the career advantages that faculty mentoring confers" (p. 191).

The scaffolding approach is important because it allows students to feel a "greater level of engagement, autonomy, and accomplishment" (p. 15), while collaborative approaches, such in

the Kowalski et al. (2016) study, typically focus on a classroom setting where students interact

and team up with each other as well as with faculty mentor(s). Because these students

participating in CUREs were also involved in individual research projects, they had the

opportunity to be involved in both a collaborative approach as well as the student-driven

approach, which is similar to the process found in *JMURJ*—a student- and faculty-run effort. In

the *JMURJ* course, students are required to submit "tri-weekly reports" as a form of self-

evaluation for the work they were performing with the journal, and how well they were working

with other members of the editorial board.

The process of disseminating student research is also a vital aspect in the research cycle

for undergraduates, and the final part in the process that is often left incomplete. An article by

Helen Walkington and Alan Jenkins, both professors at Oxford Brookes, emphasizes the

importance of publishing students' work as a part of their research processes. "Undergraduate

research findings are rarely disseminated or subject to feedback and comments from a broad

audience" (Walkington & Jenkins, 2008); however, this feedback on research findings is an

important keystone for the redrafting/revision process that may allow for even more research,

both for those submitting and editing research. Walkington and Jenkins (2008) define publication

as "to put into the public domain," which could involve presenting, creating a poster, creating a

website/blog, or even publishing an academic journal article.

Undergraduate research publication can also be turned into a more widespread initiative,

by making it a requirement for dissertation and honors-level requirements, building publication

into course/program requirements, and widening what counts as "research" and forms of

publication (Metcalfe et al., 2010; Walkington & Jenkins 2008). One strategy in particular, and

the one that was the central basis of the Walkington and Jenkins (2008) study, emphasized

involving undergraduate students in the publication process, as these students are then "brought into both the process of publication and to a better understanding of what makes an effective research publication," ("Strategy Six: Involve Undergraduate Students in the Publication Process," para. 1) which is a learning experience in itself. Walkington and Jenkins recommend complementing this strategy by training postgraduate students as reviewers as well, which can aid in their development as researchers and in the understanding of undergraduate students on effective research publication (2008).

An assessment performed by Sharon A. Weiner and Charles Watkinson (2014) on the *Journal of Purdue Undergraduate Research* (*JPUR*) asserted much of the same findings as Walkington and Jenkins, concluding that "student authors benefited from experiencing the full spectrum of the scholarly publishing process," (p. 1) as well as knowledge of literacy concepts. The stakeholder groups involved in the assessment of the journal included student authors, the student editorial board mentors, students whose abstracts were not accepted, students who attended the *JPUR* workshops, the faculty advisory board, faculty mentors of student authors, faculty mentors of students whose abstracts were not accepted, and university administrators. Online surveys were administered to the stakeholder groups, as well as evaluations for participants of the journal-hosted workshops. The survey asked to report learning gains for different areas, from writing for a professional publication to how to work collaboratively. The results of the assessment showed that student article authors reported the highest learning gains, and that of these, the primary gains were in "understanding the process for publishing an article and how to evaluate the credibility of authors" (Weiner & Watkinson, 2014, p. 9). This makes sense, as the focus of the *JPUR* journal's efforts seem to be placed on that of the student authors' improvement.

Another research area essential to understanding the breadth of undergraduate research journals' effect on students is how these journals influence student editors working with submitted research. Research in this area can only be done in a student-run research journal, one that allows for student autonomy as well as assisted learning from faculty, administrators, or other mentors. Instead of treating students publishing their writing as an "afterthought," student-run undergraduate research journals bring the idea of publishing student work to the forefront of the process, where publishing research then becomes a part of that research process for editors and authors alike (McDonnell & Jefferson, 2010).

Adrian K. Ho, a librarian at the University of Western Ontario, conducted a case study on how to create and host a student-run research journal, as well as outlined the challenges and opportunities that these journals face. In the study, Ho (2011) asserts that "Both faculty and students maintain that the development and management of student-run research journals bring about abundant learning opportunities for students who serve on editorial boards" (p. 7) However, there are also complications that arise specifically to these student-run journals, such as certain members of the student editorial board becoming less active/motivated due to their "academic pursuits, and/or tight schedules in their personal lives" (Ho, 2011, p. 9). Other students may worry about how to move the journal forward, or how to address their role as researchers versus teachers (Ho, 2011; Metcalfe et al., 2010), which is why faculty mentorship may prove important not only for the general administration of the journal, by keeping students motivated and monitoring the journal team's performance to ensure productivity.

Ho's study also asserts that, while these complications are an inevitable risk for any student-run research journal, there are also considerable benefits that come along with them. Not only can student-run journals "educate students about open access, copyright, and Creative

Commons licenses," but they can also help their student editors acquire various skills such as "how to evaluate academic writings and provide constructive criticism in the review process. They also have to work on planning, prioritizing, marketing, and time management" (p.8). Evaluating these academic writings as a student-editor becomes a specific kind of educational process in itself, and improves skills not typically found in a traditional classroom setting, such as confidence in one's understanding of research methodologies, writing, and interpersonal skills such as collaboration with other students and staff (Bauer, Ogás, Shakir, Oxley & Clawson, 2009; Ho, 2011; Metcalfe et al., 2010, p. 181). Such skills are applicable to many professional careers; however, in order to identify the competencies that must be demonstrated for "career readiness," it is first necessary to define this term as it will be used for the rest of this study.

Career readiness can be thought of largely as the demonstration of a transition between education and workforce preparation that is acquired by requisite competencies (Career Readiness Partner Council, 2014; National Association of Colleges & Employers [NACE], n.d.). Some of the most common competencies that employers wish to see in college graduates, according to the National Association of Colleges and Employers (NACE), include oral/written communication, critical thinking/problem solving, teamwork/collaboration, digital technology, leadership, professionalism/work ethic, career management, and global/intercultural fluency (NACE, n.d.). While direct job-related experience is typically preferred by recruiters, general knowledge, skills and attributes often sought for newly graduated recruits may also include academic achievement, literacy, and interpersonal skills (Caballero & Walker, 2010, pp. 13-14). Gardner and Liu (1997) conducted a particularly helpful study that surveyed over 150 employers asking them to observe and rate their technical and non-technical graduated employees' work preparation in accordance with job performance requirements. The skills and competencies were

then grouped in nine categories: (1) speaking and listening, (2) reading, (3) writing, (4) mathematics, (5) thinking and reasoning, (6) organizational skills, (7) analyzing analytical data, (8) job skills, and (9) personal skills. The study found that "For both technical and non technical graduates a lack of work readiness was observed in relational and personal competencies, skills not directly taught in the classroom" (Caballero & Walker, 2010, p. 16). Specific transferable skills such as motivation, tenacity and commitment were also seen as useful by employers, and could be developed by work experience, internships, and extra-curricular activities (Taylor, 2005).

In Ho's case study, it was the role of the library at Western to facilitate their student-run research journals, making the process different from that of a collaborative classroom approach, such as with Kowalski et al.'s (2016) "CUREs" or *JMURJ*. Walkington and Jenkins (2008) acknowledge in the conclusion of their article how, while there is a growing body of research pertaining to the positive impacts of student involvement in undergraduate research programs, many journals have yet to set forth assessing career-readiness in their postgraduates. There is also a lack of research on the specific skills that student- *and* faculty-run undergraduate research journals may facilitate for their student editors, which the current study will aim to address by providing both quantitative and qualitative research on past and current editorial board members of *JMURJ*. Because *JMURJ* is concurrently embedded within course curriculum, as well as a collaborative and student-driven research experience, I have incorporated ideas from each of these studies into my own methodology, particularly the questions that I will be asking current and former students of *JMURJ*.

Methodology

Due to the small, classroom-based setting of the *JMURJ* course, I made specific choices in the way I designed the current study based on the above research as well as personal experience. The methods I used to acquire respondent feedback, the questions that I chose to include, as well as the skills that were posed in these questions reflect this research and the nature of this specific journal. I chose a self-reporting survey as my method of obtaining feedback from students, due to both time and geographical constraints for myself and my research participants. The process of self-reporting students' progress, successful in both Manarin et al's (2016) CUREs and in Kardash's (2000) UREs, is one of the reasons that I chose the self-reporting survey approach in order to assess students' professional growth for the *JMURJ* experience. In Kardash's survey, interns participating in UREs were given the opportunity to self-report their experience and thus provide descriptive statistics and t-tests of their experience. Due to the short-term nature of this thesis, the timeframe for conducting the survey and analyzing responses being less than a year, pre- or post- tests such as Kardash's or an in-depth case study such as Ho's would have not been feasible, and individual interviews would have been improbable given participants' (particularly postgraduates) current locations and occupations. Given that most participants would either be studying or working full- or part-time, I felt that a brief self-reporting survey would invite the most responses, and thus data to be analyzed.

The participants for the current study were *JMURJ* alumni and students enrolled in the *JMURJ* course during the time of the study. I recruited participants (with permission from JMU's Institutional Review Board) via a list of *JMURJ* participants, published on the journal's website, from the year 2013 until the Fall of 2017. A total of 59 JMURJ participants were contacted via

their most up-to-date e-mail (as provided by the JMU Alumni Association) on November 9th, 2017 prompting them to participate in the Qualtrics survey that was used for the current study, using the JMU Institutional Review Board's web/email cover letter template (Appendix B). The survey was then kept open for responses for two weeks from the date it was administered, with the last response recorded on November 15th. No additional requests for responses were made; all participants were only contacted once with the initial survey. A total of twenty-one students completed the survey, giving the study a 36% response rate. No responses were excluded for any reason. Fourteen of the participants were graduates, while the other seven participants were undergraduates (five seniors and two juniors). Due to the small sample sizes of these groups for this project, and the fact that not all of the previous and current *JMURJ* participants volunteered to complete the survey, much of the results of the survey needed to be analyzed qualitatively instead of quantitatively.

The actual survey administered for this study posed questions about students' and alumni's current or past experience with *JMURJ*, based on the core competencies as set forth by the National Association of Colleges and Employers (NACE) that employers look for when considering postgraduates' "career readiness," as well as the core objectives that *JMURJ* lists on the course syllabus after prospective editors have applied and been accepted (NACE, n.d.; Jefferson, 2018, "Learning Objectives"):

· Define leadership and team roles and responsibilities integral to an academic publishing process, including screening, review, and working with authors and reviewers.

· Demonstrate communication skills necessary in working with a variety of academic audiences.

· Understand the kinds of research scholars do in their respective disciplines, genres, and media.

· Apply comprehensive editing techniques, editing tools, references, and software and/or layout and design principles

· Describe how ethics, morals, and values relate to the academic publishing process, starting with source use, copyright issues, and fair use policies.

No audio or videotaping occurred throughout the conducting of this survey; the only data collected was from the survey itself. See Appendix C for full survey questions and answer options. When responses could not be compared quantitatively, such as with the text entry options, I used the text analyzing software from https://www.online-utility.org/text/analyzer.jsp to compare the frequency of primary keywords and phrases.

The eleven survey questions I asked were:

1. *Are you a current student at James Madison University? If so, what year?*
2. *What is/was your major(s) at JMU?*

Question #1 was a multiple-choice question to gauge where the editorial board members stood in their academic careers, while Question #2 was a text-entry response question aimed to specify the different disciplines that current/past board members fell into. These questions were meant mainly to give context to later questions in the survey, so that I could draw further conclusions from their results, such as whether or not students' experience with undergraduate

research could be linked to "heightened graduate school performance" in skills such as

autonomy, collaboration, motivation, and duration (Gilmore et al., 2015; Metcalfe et al., 2010).

Question #1 would clarify whether or not students had actually graduated from the university

yet, while the second question would allow me to evaluate the multidisciplinary nature of the

journal's editorial team.

3. *What was/is your role(s) in JMURJ?*

4. *How many semesters did/have you spent with JMURJ?*

5. *What initially made you interested in joining JMURJ?*

Questions #3-#5 aimed to assess the different roles, such as teams, that the board

members served on, for how long, and for what reason(s). Question #3 was multiple-choice, the

choices including the three teams that journal participants could choose from (editing, marketing,

and design), and was a question tailored specifically to the *JMURJ* course experience, as I was

curious to see if the teams corresponded with the advancement in specific skills participants felt

were most improved. Question #4 was meant to give context for the rest of my research

questions, as I was curious if the amount of semesters one spent in this undergraduate research

journal correlated with the extent to which participants felt their skills were improved by it. The

question contained a single-line text entry response to minimize the number of multiple-choice

answer options that the question would require. Question #5 was also text-entry, but an essay

text box to allow for the wide range of answers that students could include. This question would

allow me to identify students' motives for originally joining the journal, which could tie into

their motivation and participation, which Ho (2011) says can fluctuate given a students'

"academic pursuits, and/or tight schedules in their personal lives" (p. 9)

6. (If current student) *What are your plans for after graduation? Is there a particular field you wish to go into?*

   o (If graduated student) *What is your current occupation?*

7. *Did you become an editorial board member in order to build the skills you would need for your current/future job?*

Questions #6 offered a multi-line text entry response meant to examine the career goals that current student editors have for a future profession, or assess where postgraduate editors were in their current career. I wanted to know if there was a difference in student versus alumni perspective on their career readiness, as Kowalski et al. (2016) and Awong-Taylor et al. (2016) state that student career clarification has been shown to increase after classroom undergraduate research experiences. Question #7 was meant to see if these career goals/current professions aligned with the participants' involvement with *JMURJ*, and offered the multiple-choice responses of "Yes," "No," and "Somewhat." In designing this question, I used a combination of my own research question and Kardash's (2000) in her study of undergraduate research experiences (UREs), in which she asks "What research skills do undergraduates most hope to develop by their participation in the URE?" (2008, p. 192)

8. *What skills, if any, do you feel have improved due to your involvement with JMURJ?*

9. *What class activities, if any, do you feel assisted in improving the skills previously mentioned?*

These two survey questions were meant to answer my initial research questions: "How can the undergraduate research journal at JMU, *JMURJ*, help prepare student editors for their future career goals?" and "Are there specific skills/competencies that *JMURJ* can equip its student editors with, and what class activities contributed to these skills?" Question #8 was a matrix table with five scale points ranking improvement as "No improvement," "Barely improved," "Somewhat improved," "Greatly improved," and "Unsure," which reflects the 5-point scale rating that Kardash (2008) uses, her scale ranging from "not at all" to "a great deal." The table from the current study offered seven skills for participants to rate, based on the different teams the board offers (Editing, Marketing, and Design); applicable "career readiness" competencies (Communication, Leadership, and Collaboration) listed by the NACE (NACE, n.d.); my own personal experience with *JMURJ*; and the function of publishing as a research process (McDonnell & Jefferson, 2010, p. 109). Question #9 offered a text-entry response with an adjustable form box that allowed participants to write as much or as little as they wanted about class activities that they felt strengthened the skills mentioned in Question #8, as certain skills (such as "editing") are more broad in nature and required examples of what tasks were performed throughout the course in order to clarify their meaning to the respondents. I used thematic analysis to compare common themes in the responses for Question #9, to deduce what the implications of these themes might be.

10. *How confident are you in your skillset for your current/future profession?*

11. Is there anything else you would like to add about your experience with JMURJ?

Question #10 was meant to assess the degree to which participants felt their skillset had changed/improved due to their involvement with *JMURJ*, in the form of a slider ranging from 0 to 100. This question is framed similarly around Kardash's (2008) second research question, "Do research interns' perceptions of their ability to perform the research skills change as a result of their participation in the URE?" but geared more toward career readiness based on NACE and *JMURJ*-specific skills than on the research skills used in Kardash's survey. Question #11 was included simply as a text-entry essay box to give respondents the opportunity to add any final remarks they had about their *JMURJ* experience. I used thematic analysis again in the responses of this question to identify common trends and their implications.

Results

Of the graduated *JMURJ* participants, the alumni had majored in Writing, Rhetoric and Technical Communication (3), School of Media Arts & Design (2), Health Sciences (2), Psychology (2), Communication Studies, Music Education, Accounting, and German. These numbers do not equate to the amount of students who answered Question #1 of the survey, as only twelve responses were recorded after that initial question, and one of the participants was a double major. Of the current *JMURJ* participants, five majors were represented: WRTC (3), SCOM, English, Psychology, and Marketing.

Graduated Students' Roles

Current Students' Roles
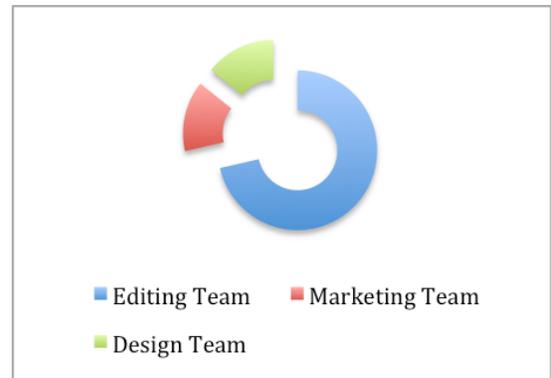
As for their individual roles in *JMURJ*, a majority of both the graduated and current *JMURJ* participants reported that they were on the editorial board's "editing team;" 58.33% of graduates and 71.43% of current participants. The second most common team was marketing, which reached 33.33% for graduated participants 14.29% for current participants. The least commonly reported team was "design," which only consisted of 8.33% of graduated participants and 14.29% of current participants. Of the seven undergraduate respondents, 5 reported being on the editing team, with only one respondent each on the marketing and design teams. Of the

twelve graduated respondents, seven responded having been on the editing team, four on the marketing team, and one on the design team.

Two of the graduated participants responded that they had taken the *JMURJ* course for one semester, 2 responded with two semesters, 4 responded with three semesters, and then 3 responded with five semesters. Of the current *JMURJ* participants, 5 responded that they had been involved for two semesters, 1 responded with three semesters, and 1 responded with four semesters.

When assessing the results of Question #5, "What initially made you interested in joining *JMURJ*?" I used a primary keywords frequency counter to determine common trends in the responses of both the current and graduated groups. Overall, the word "honors" was used seven times, which was the most used word excluding common language. "Edit" or "editing" was used six times, "publishing" or "publication" was used six times, and "writing" was used four times.

Due to the sample size and variety of answers for the text-entry in Question #6 about current occupations for graduates or post-graduation plans for current students, the primary keywords frequency method was inconclusive. This information can be analyzed qualitatively based on individual responses, however, and by comparing the individual responses to each other. For current students, three of the six students responded that they wished to enter into a graduate program of some kind, whether it be law school or some other form of higher education. Two of the respondents mentioned editing in their post-graduate career plans, one targeting book publishing specifically. The graduated respondents' answers on their current occupation were much more direct as well as extensive in scope, and only three were writing-specific professions: "technical editor," "technical writer," and "copywriter." Two respondents held a teaching/instructor position, two were involved in higher education opportunities such as

pursuing a PhD, and the rest were involved in industry-specific business opportunities (e.g. "Director of Communications" and "Account Coordinator for a public relations agency").

When prompted with a multiple choice question about whether or not the past/current *JMURJ* participants became an editorial board member in order to build the skills they would need for their current/future jobs, "Somewhat" was the most common response collected; 58.33% of graduate participants selected this option, and 50% of current participants selected this option. "No" was the second most common response for the graduated group with 25%, and "Yes" as the least common for this group with 16.67%. For the current participants group, "Yes" was more common than "No," with 33.33% responding Yes and 16.67% responding No.

"What skills, if any, do you feel have improved due to your involvement with JMURJ?" – Graduated Respondents
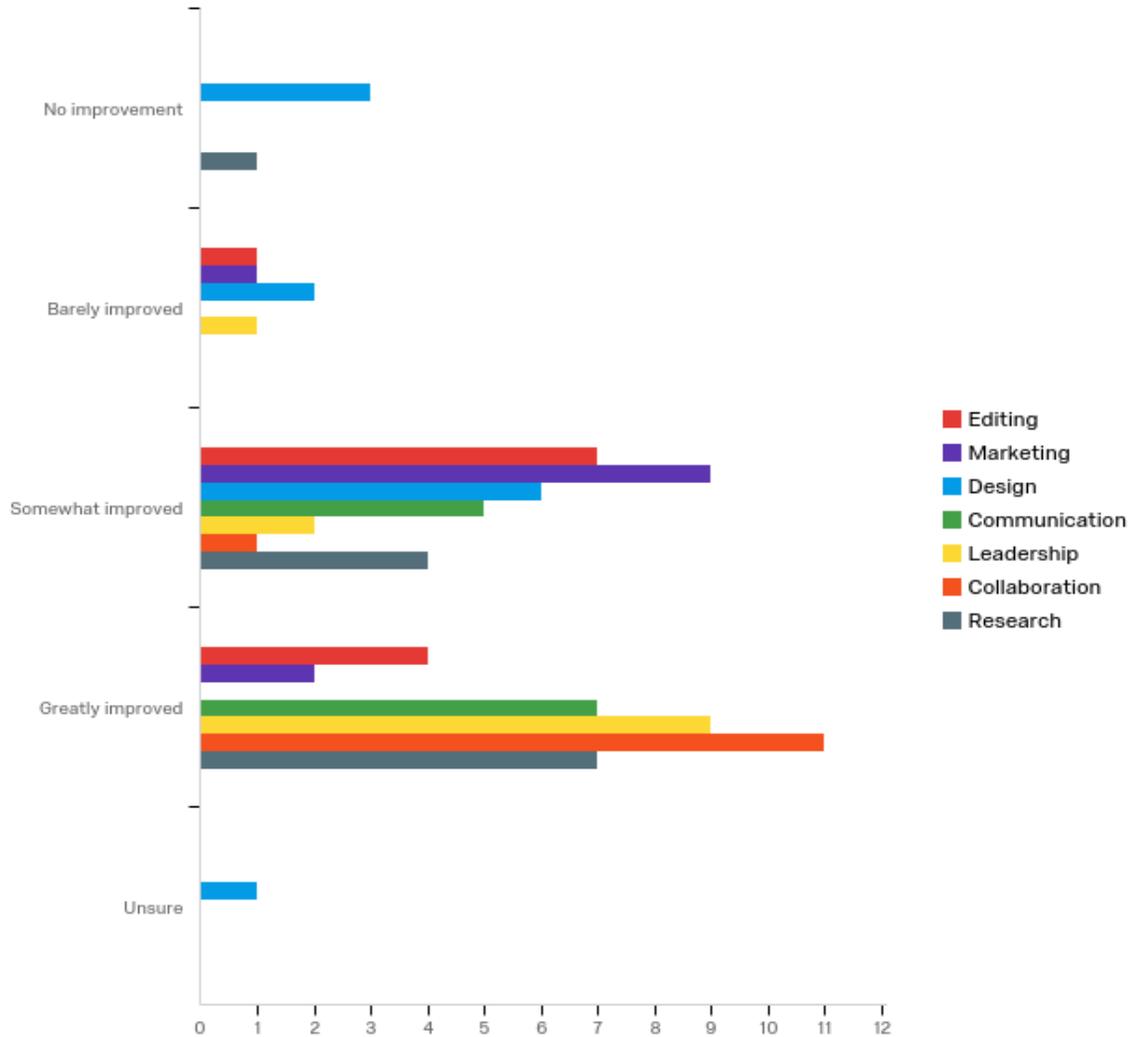
When asked to rate what skills, if any, that they felt had improved due to their involvement with *JMURJ*, an overwhelming amount (91.67%) of graduated respondents ranked "collaboration" as a greatly improved skill. The second most commonly selected skill in the "greatly improved" category by the graduated group was "leadership," (75%) followed by "communication," (58.33 %) "research," (58.33%) and "editing" (33.33%). In the "somewhat improved" category, "marketing" was the most commonly selected skill at 75% for graduates, followed by "editing" at 58.33%, "design" at 50%, "communication" at 41.67%, and "research" at 33.33%. Although there were few responses in the "barely improved" and "no improvement" categories, "design" was the most commonly selected in both, with 2 or 3 respondents in each.

"What skills, if any, do you feel have improved due to your involvement with JMURJ?" – Undergraduate Respondents
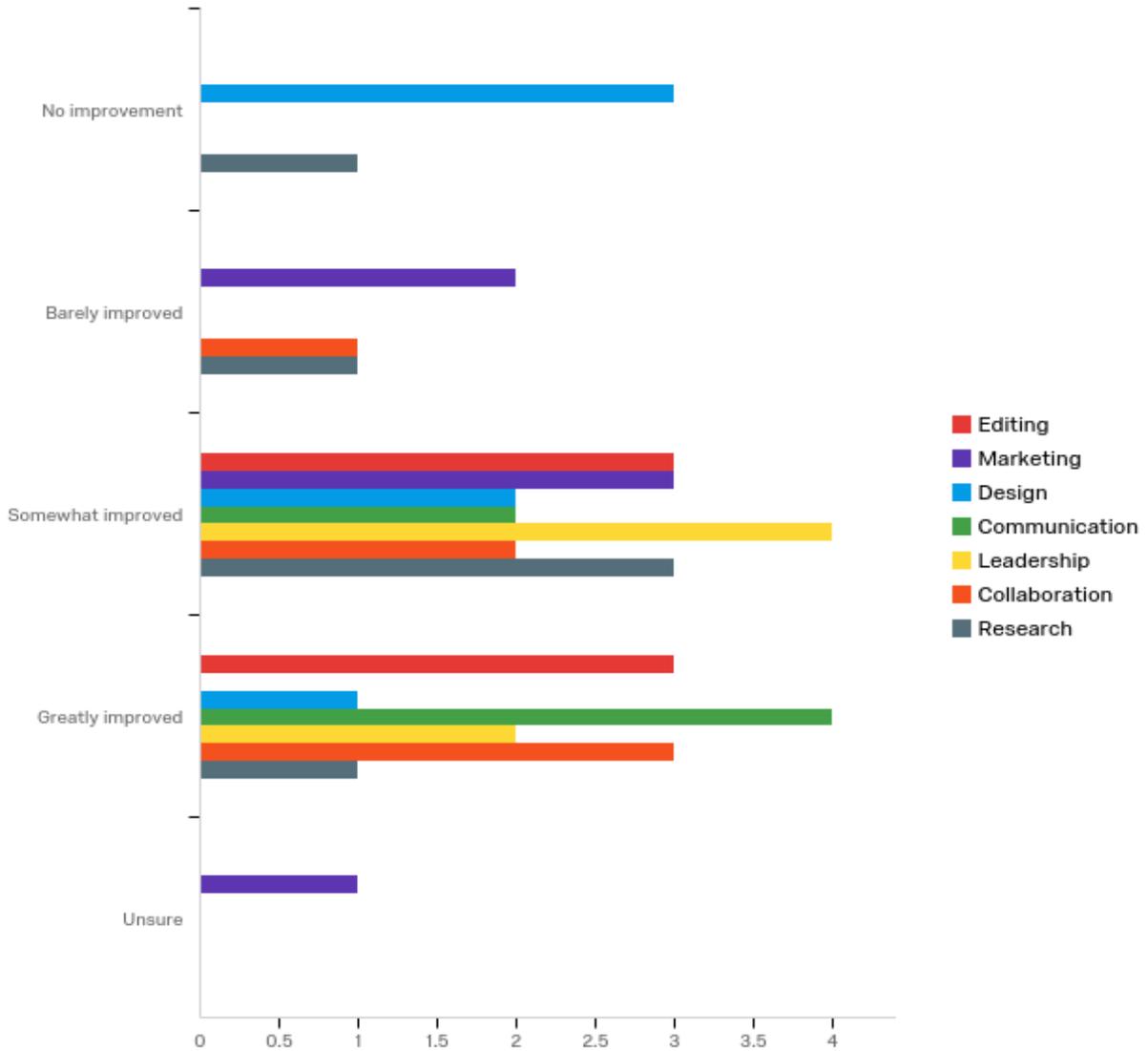
As for current *JMURJ* participants posed with the same question, "communication" was the most commonly selected response in the "greatly improved" category at 66.67%, "editing" and "collaboration" tying for second place both with 50%, followed by "leadership" (33.33%), and then "design" (16.67%) and "research" (16.67%). Under the "somewhat improved" category, "leadership" was the most commonly selected at 66.67% of respondents, followed by

"research," "editing," and "marketing" all with 50%, and the rest of the categories (collaboration, communication and design) all with 33.33%. Of the "barely improved" and "no improvement" categories, marketing was the most commonly selected for barely improved at 33.33%, and design the most commonly selected for no improvement at 50%, similar to alumni respondents.

Interestingly, when assessing what class activities assisted in improving the skills previously mentioned for both the graduated group and the current participants group, the most frequently used phrase used by both was "working with other board members," which was used four times according to text analyzing software. For both groups, "screening," "copyediting," and "manuscripts" were frequently used words under what activities that gave them editing skills, along with working with other editorial members. Under what activities improved marketing skills, social media was commonly referred to for both groups, as well as "presentations" for graduated respondents. For design skills, respondents mentioned "making posters" and "calls for submission," as well as creating/voting on the designs for finished volumes. For communication skills, seven respondents talked about emails and corresponding with faculty reviewers, and five mentioned working with other classmates/board members. Leadership skills were reportedly advanced by class activities such as the "delegating of tasks" between board members, and leading individual teams for certain current and graduated respondents. Collaboration skills were reportedly improved by coordinating and talking with other board or team members, particularly when working with manuscripts or performing copyediting tasks. Research activities that respondents said improved this skill were reading through submissions, fact and source checking, and "knowing what good research looks like" by seeing how work gets evaluated firsthand.

"How confident are you in your skillset now for your current profession?" –

Graduated Respondents

#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Confidence	61.00	100.00	81.00	11.57	133.83	12

For the slider ranging from 0 to 100 in Question #10, the graduated participants rated their confidence in their skillset for their current profession at a minimum of 61, with a maximum of 100. The mean confidence level for this group was 81, with a standard deviation of 11.57.

"How confident are you in your skillset now for your current profession?" –

Undergraduate Respondents

#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Confidence	50.00	80.00	65.33	9.59	91.89	6

For the current participants group, the minimum confidence level was 50 and the maximum 80, with a mean of 65.33 and standard deviation of 9.59. This information shows that the graduated *JMURJ* participants were, overall, more confident in their skillset for their current profession compared to current students, although this could be due to the fact that they have graduated and likely already acquired some experience within their profession after college.

Discussion

Implications

As stated previously, *JMURJ* operates in a classroom setting where students fill its editorial, marketing, and design teams, as well as have some agency over these teams depending on the students' individual skillsets, what they wish to gain from the course, and the contextual needs of the journal. According to the results, a majority of both the graduated and undergraduate respondents were on the board's editing team, which likely reflects on the results found for the rest of the survey, such as the majors that these respondents reported being associated with (Question #2), what made them initially interested in *JMURJ* (Question #4), what fields current students wished to go into and the professions that graduated respondents were currently in (Question #6), and the skills they felt were improved during their time on the editorial board (Question #8).

The above data shows that, while Writing, Rhetoric and Technical Communication (WRTC) was a common major associated with the editorial board for the journal, there are still students from multiple other departments who were/are involved, including the business and science departments. The abundance of WRTC majors was not surprising, as the words "edit" or "editing" were the second most commonly used words in both groups' responses to what made them originally join *JMURJ*, and a skill that many students studying writing may wish to hone for their future profession(s). Due to the most frequent primary word being "honors," however, one can assume that the main reason students chose to take the course was to fulfill an honors requirement, or found it an interesting/resourceful elective for editing, publishing, or writing purposes.

Due to the multidisciplinary nature of the scholarship that *JMURJ* publishes, the same can be concluded about the nature of its editorial team, who vary in the departments that they major/ed in—although a good portion major/ed in WRTC. This is a likely source for the variety of answers in the text-entry question about current occupations for graduates or post-graduation plans for current students, which resulted in inconclusive quantitative data regarding future career goals. When analyzed qualitatively, however, it was found that many current students had plans of extending their higher education in graduate programs, or wanted to pursue a career in writing/journalism, editing, or law. Due to the responses for Question #7, it could also be concluded that most respondents were somewhat inclined to join the journal's editorial board for these current/future job-related goals.

As for the specific skills that *JMURJ* equips its student editors with, Question #8 was the most helpful. This produced perhaps the most interesting finding of the survey response data, as I had initially hypothesized that "editing" would be one of the most commonly selected skills under "greatly improved," due to the large number of students on the editing team compared to other teams. However, this was not the case, perhaps due to the fact that many participants were WRTC majors, and already have editing skills and experience. Interestingly, an overwhelming amount of graduated respondents rated "collaboration" as a greatly improved skill due to their time with *JMURJ*. This finding parallels the study done by Gilmore et al. (2015), which found that undergraduate research fostered skills such as autonomy, *collaboration*, and motivation in students. Because students on the *JMURJ* editorial board frequently perform tasks (e.g., fact and source-checking) that require additional research on accepted manuscripts, this makes the *JMURJ* course a vehicle for research in and of itself. The journal being a student-run publication, research skills could also be improved in that students could learn how to format individual

projects later on for publication if they needed/chose to perform their own research. The editorial

board members also need to be in constant communication with each other, which is likely why

current *JMURJ* participants responded that "communication" was their most greatly improved

skill, and both groups of participants frequently answered with the phrase "working with other

board members" in response to what class activities they felt improved their skills.

I found questions #9, 10 and 11 of this survey the most constructive when answering my

first research question: How can undergraduate research journals, such as *JMURJ*, help

professionalize student editors for their future career goals? Class activities such as screening

and copyediting manuscripts, collaborating with fellow board and team members, marketing

through social media and public platforms, and the delegation of specific tasks all assist in this

effort. One respondent made the comment in response to Question #11 that

> The skills I learned and improved upon during my time in JMURJ are still important to
>
> my career today. The insight given to me while at JMURJ was especially helpful while I
>
> was in graduate school and expected to create research papers of the caliber to be
>
> submitted to a research journal for nearly every class.

This statement, along with that of the respondents' answers on what class activities advanced

their research skills, implies that the process of analyzing or "screening" submitted research for

publication has been a key component in how students frame their own research later on in the

professional or graduate world. While responses were typically short for Questions #9 and #10

from the undergraduate group, with the exception of one individual, responses from the

graduated group ranged from single-sentence explanations to three to four sentence paragraphs

from multiple respondents. This implies more of an understanding from the graduated group

about what class activities/qualities of *JMURJ* in particular were useful to them in their current career goals, which also speaks to their higher confidence rating for the results in Question #10.

Graduated editorial board members' responses showed a confidence level of 81 out of 100, while current students had a mean of 65, showing an increase in the confidence of *JMURJ* members' skill sets after graduation. The results of Question #10 could be due to the fact that current students have not had the opportunity to see their skillset put to use in a professional work environment yet, compared to graduated students who likely have professional work experience on which to base their opinion. These results could also potentially be linked to how many semesters graduated students may have accumulated over time with the journal, as current students may have only seen the benefits of one or two semesters with the journal. Students may take the *JMURJ* course for credit as many semesters as they desire to, and most of the respondents in the current study were on the board for more than two semesters, according to the above results. Because the *JMURJ* journal publishes volumes on an annual basis, it is those students who have participated for multiple semesters who will be able to see the accumulation of their efforts in a published volume from start to finish.

While research already exists on the usefulness of undergraduate research programs for students and the positive impacts of these programs, Ho's (2011) case study on how to host and effectively maintain these student-run journals was particularly helpful in understanding the importance of the current study's results. While the undergraduate research journal at James Madison University shows positive results on the confidence of current and graduated students' in their employability and collaboration/communication skills, conducting assessments of this journal's impact on student learning can motivate students who are potentially interested in

becoming involved in an undergraduate research journal experience to join *JMURJ* as well to improve their own confidence levels in these areas.

Ho (2011) also mentions the dangers of student editors becoming less active/motivated due to their "academic pursuits, and/or tight schedules in their personal lives," (p. 9) which became relevant in the current study's results as well. One student made the additional comment in the last question that, "[*JMURJ*] was a lot of very practical experience, it was enjoyable, but sometimes it felt like there was a lot of pressure to make certain deadlines." This response came from a current undergraduate student of the journal, who is likely getting accustomed to the deadline-driven nature of a student-run publication. Conversely, one graduated respondent answered for Question #11 that

> I may not be working in the writing field but I have often said that JMURJ was the most realistic professional experience I had while in school. The leadership and collaboration skills I developed in my semesters at JMURJ helped me rise quickly as a manager. The pressure of working under deadlines and the sometimes delicate nature required when working with someone else's research and writing have also helped me as a manager when work is busy or when I'm required to speak with an unhappy guest. I do plan to work in the writing field eventually and can easily picture myself working as a project manager or something similar one day, largely due to my JMURJ experience combined with my current work experience.

This graduated respondent, in sharp contrast to the undergraduate respondent who saw working under deadlines as "unenjoyable," took the deadline-driven nature of the journal experience and used it to their advantage in their work setting. This again may speak to the higher confidence levels that graduated students displayed, as many were then able to see first-hand the practical

nature of classroom experiences with *JMURJ* within their professional lives. The vast majority of answers to the last open-ended question about respondents' experiences with *JMURJ* were positive, much of the dialogue consisting of praise for the journal and the skills that were gained through it. For example, two of the graduated respondents even commented that it had changed their career trajectory in some way, such as, "By senior year, I was prioritizing *JMURJ* work over other course work, which helped me realize that I wanted a job that was similar to what I did for *JMURJ*." Therefore, not only was the course improving certain skills for students, but it was assisting them in determining future career choices as well.

Limitations

Due to the small size of the *JMURJ* editorial board, the response data provided by graduated participants was more readily conclusive based on the amount of responses that were recorded and able to be analyzed, although a higher response rate was obtained from undergraduate respondents given the ratio of students in the course compared to respondents. In addition, the current study is limited due to the time period that it was conducted, as the survey was only administered to the Fall 2017 course participants as well as graduates, which discludes the most recent Spring 2018 participants of the journal who might have supplied additional feedback. *JMURJ* participants were only contacted once by e-mail requesting them to complete the survey, which also may have resulted in a lower response rate for both groups.

Along with the current study's survey-style design, the answer choices available for respondents under certain questions were also a potential limitation, as some questions did not invite as much feedback as others. For example, Question #7 was designed as a multiple choice question, limiting the amount of feedback that participants could provide as to why exactly they

felt that they had or hadn't joined *JMURJ* to improve the skills they would need for their current/future jobs. While this question's design was intended to produce more quantitative feedback, it might have been helpful to provide a text-entry feedback option in order to allow participants to clarify on their answer choices.

The skills listed in the survey for Questions #8 and #9 are limited to the NACE competencies and the *JMURJ* course objectives that I considered most relevant based on my personal experience with the journal. I would have liked to invite more feedback on what skills participants felt were improved, such as with a multiple-line text-entry box that invited students to add any outside of those listed in the current survey. This would have allowed for more of a variety of answers than the ones chosen, what their definition of the broader set of skills (such as "editing" or "communication") entailed, and a more thorough investigation into what specific aspects of the journal students felt had improved their skillsets, although not necessarily career-related. A question inquiring about the journal's downfalls with an essay-entry text box also would have been particularly helpful in improving the overall undergraduate research and publishing experience for student-editors in the future, as it would have invited more of a conversation from current/past participants of the journal as to what specifically is/wasn't working.

The survey-style design of the study is also a limitation to its responses, as students could choose to end the survey at any point in time or leave any question unanswered if they chose to do so, rendering these questions in the survey incomplete. While fourteen students initially responded that they were graduated, only twelve completed Question #2 up to Question #10, and only seven provided feedback for Question #11. As for the undergraduate respondents, all seven of them answered Questions #1 through #4, after which six of them continued to provide

feedback until Question #8. One of the remaining six respondents chose not to answer Question #9, and only three responded to Question #11. This left gaps in the research results, particularly for questions that required more thorough answers, such as with text-entry based questions. This kind of gap is anticipated for a survey that is voluntary in nature, as participants may withdraw at any time they choose; however, it poses a problem when attempting to analyze the result data and make legitimate inferences when comparing questions with unequal participant feedback.

It is important to note that many of the ideas mentioned in the implications section are contextual possibilities rather than certainties, and further research must be done to assess the validity of implications made from qualitative research.

Due to the highly subjective nature of self-report, free-response answers from students, I am unable to make any concrete claims as to whether or not students actually were improving, or how much they were improving in these various skillsets, but rather their attitude toward whether or not they improved. Future studies on undergraduate research journals and how they affect their student editors may choose to include pre- and post-tests to acquire more conclusive evidence of improvement, although the inclusion of a pre-test would consequently come with the risk of response shift bias. In addition, a control group could also help to strengthen the study, which Kardash (2000) addresses as a downfall of her survey on interns participating in undergraduate research experiences. Such a control group might include students of the same major and taking the same classes, but who had not participated on the journal's editorial board (p. 199). Obtaining a control group would have been a difficult task with a multidisciplinary undergraduate research journal such as *JMURJ*, as students come from all different parts of campus and tend to take a variety of other classes, which is why one was not used in this study.

However, a control group could be attainable for another journal that has an editorial board

dedicated to the same major/subject, and thus beneficial in the methodological perspective.

Conclusion

This project started as an initial curiosity regarding the effects that an undergraduate research journal such as *JMURJ* has on current students' and alumni career readiness, due to my own personal experience on the *JMURJ* editorial board. I felt that, after my time spent on the journal's editing team for three semesters, my leadership, editing, and collaboration skills had all progressed in ways that they couldn't in a traditional classroom setting. This realization about my own personal growth with the board led me to investigate whether or not other studies had been conducted in the past on participants of undergraduate research journals, and if the current/past participants of the *JMURJ* course in particular felt that their skillsets had improved for their future career goals as well due to this course.

Literature such as Kowalski et al. (2016) and Awong-Taylor et al. (2016) showed that career clarification was shown to improve with their CUREs, and studies such as Manarin et al. (2016) and Kardash (2000) discussed the different approaches that these CUREs took as well as how they assessed them. These two studies in particular, as well as the guidance of my faculty advisor helped to shape my actual project type, which took the form of a brief, self-reporting and voluntary Qualtrics survey. The studies done by Ho (2011), Metcalfe et al. (2010), and Bauer et al. (2009), along with the NACE core competencies, the JMURJ course objectives and my own personal experience, assisted me in narrowing down just what skills the JMURJ course offered that could be used to assess the career readiness of its past and present editorial board participants.

What this research showed is how this particular, student-run undergraduate research journal (*JMURJ*) was able to foster an improved sense of confidence in collaboration, leadership, and communication skills among the participants of its editorial board, through different

classroom activities such as screening and copyediting manuscripts, collaborating with fellow board and team members, marketing through social media and public platforms, and delegating specific tasks to editorial board members. While there are activities that assist in some areas more than others, the evaluation and dissemination of student research is inevitably at the heart of this undergraduate research journal, and other journals with the same goal may wish to use this research or information regarding this journal's operations to steer its participants toward, and even help them realize, their future goals as well.

As mentioned before, each undergraduate research journal is inevitably a product of its environment, and should therefore be analyzed in the context of its local situation. Journals frequently vary in what institutions they are based out of, what disciplines and institutions they will accept submissions from, whether or not students are involved in the editorial process, the size of their editorial boards, what disciplines their student editors are in, their faculty mentorship involvement/uninvolvement, along with whether or not the journal is actually embedded in course curriculum. Each journal is unique, and *JMURJ* is one of its kind in that it is a multidisciplinary, student-run, faculty mentored, and for-credit course offered by James Madison University. Therefore, the work done in this survey is not meant to be replicated or applied to undergraduate journals at other universities, as the results and methodologies used may or may not be applicable, and the implications mentioned heretofore are strictly contextual possibilities, not statistical certainties. However for another journal that is in its later stages of self-assessment, the current study may provide some examples of questions, as well as recommendations for more extensive research that may potentially be useful.

Given *JMURJ*'s smaller nature, its most recent editorial boards reaching around twenty or so students per year, other smaller undergraduate research journals with the goal of assessing

student progress may wish to conduct their study on graduated participants as well as current editorial board members. Other studies might also consider sending reminders to potential participants to complete a survey in order to achieve a higher response rate. In order for a researcher to produce data that is more quantitatively centered on undergraduate research journals in the future, researchers might also use pre- and post-tests rather than the self-reporting method that I chose to use in my study, as well as a control group to generate more readily conclusive evidence of improvement in their participants. It would be interesting to see a further study done on how/if additional semesters in an undergraduate research journal amplifies the effects of participation on their skillset, as a way of connecting confidence rates in future/current professions to student involvement.

In addition, it is not advised that a researcher use the limited, specialized list of skills that I used for studying this specific journal, as course objectives and disciplinary nature of other journals may differ substantially and these skills rendered non-transferable. Researchers are encouraged to choose skills that are specific to a journal's individual process, environment, and participants, or choose not to list specific skills altogether and rely solely on self-reporting feedback. Whatever the methodology that future studies take, I hope to see the research on undergraduate research journals continue long into the future, and that this study adds to an emerging conversation about undergraduate journals and their impact on career readiness.

Appendix A

JMURJ Screening Criteria

The *JMURJ* Editorial Board screens all *JMURJ* submissions to ensure that they are appropriately research-oriented and appropriately accessible before passing them along to our team of faculty reviewers. The Editorial Board has reviewed the submission and has found some opportunities for revision. We have noted a few of them below and have offered some specific suggestions for consideration. Authors who attend to these suggestions may resubmit their work.

Permissions • If human subjects were used in the project, does the student have the approval of the Institutional Review Board? • Does the project contain copyrighted material that is properly cited, paid for, or used with the permission of the owner?	If **NO**, reject.
Authorship • Did a JMU undergraduate student or team of JMU undergraduate students create the submission?	If **NO**, reject.
Length • If the submission is primarily text-based, is it 2,000-6,000 words (excluding any abstract, notes, and the Works Cited/References/Bibliography page)? • If the submission is not primarily text-based, can it be viewed, heard, or otherwise appreciated in a reasonable time?	If **NO**, reject or return to author.

Content	If **NO**, reject or return to author.
• Whether the submission is primarily text-based or not, does the submission—or a component of the submission—foreground the research involved? • Is it clear that the scope of the research matches the scope of the paper?	

Accessibility

• Is the research presented in a way that readers from a diverse academic university audience can understand?
• Considering the multidisciplinary audience, does the submission as a whole avoid or limit unnecessarily complex or difficult discipline-specific language?

Methodology

• Is it clear that there is a purpose that leads to a discovery or an application of knowledge?
• Is it clear that the purpose engages appropriate primary and secondary research?
• Does the submission discuss, apply, and/or analyze the source material, or does it seem to be simply presented?

Organization & Cohesion

• Is it clear that the sections are relevant and do they seem to flow?
• Is it clear that the organization effectively supports the purpose and presentation of the submission?
• Is it clear that there is a conclusion that convincingly presents the evidence and argument or provides a framework for additional research?

Readability

• Does the submission consistently display a mature command of language through vocabulary, syntax, grammar, and punctuation?
• Are there consistent mechanical errors that are significant obstacles for comprehension or readability?
• Can the audience easily read and understand the figures, tables, and images?

Appendix B

The Effects of an Undergraduate Research Journal on Student Professionalization

Identification of Investigators & Purpose of Study

You are being asked to participate in a research study conducted by *Alexandra Hoen* from James Madison University. The purpose of this study is to *analyze how undergraduate journals affect the professionalization of students*. This study will contribute to the student's completion of her senior honor's thesis.

Research Procedures

This study consists of an online survey that will be administered to individual participants through *Qualtrics (an online survey tool)*. You will be asked to provide answers to a series of questions related to your personal professionalization through your work with the *James Madison Undergraduate Research Journal* (*JMURJ*).

Time Required

Participation in this study will require approximately 5 minutes of your time.

Risks

The investigator does not perceive more than minimal risks from your involvement in this study (that is, no risks beyond the risks associated with everyday life).

The investigator perceives the following are possible risks arising from your involvement with this study: feelings of mild discomfort or stress while reflecting on past experiences involved with *JMURJ*. To mitigate risk, this survey has been designed to ask non-revealing and non-provocative questions, and no identifiable information will be used or stored in the research process.

Benefits

Potential benefits from participation in this study include valuable insight into their experience with *JMURJ*, and know that they are benefitting the research as a whole by answering a simple survey. This research can potentially benefit *JMURJ* itself by allowing the journal to see into its strengths and weaknesses, and further develop its curriculum accordingly. The research could also potentially benefit other schools that are interested in pursuing an undergraduate research journal, as it will give them an insight into what was effective/ineffective with the one at James Madison.

Confidentiality

The results of this research will be presented at the Honors Symposium in the spring semester of 2017. While individual responses are anonymously obtained and recorded online through Qualtrics *(a secure online survey tool)*, data is kept in the strictest confidence. *Responding participants' email addresses will be tracked using Qualtrics for follow-up notices, but names and email addresses are not associated with individual survey responses. The researchers will know if a participant has submitted a survey, but will not be able to identify individual responses, therefore maintaining anonymity for the survey*. The results of this project will be coded in such a way that the respondent's identity will not be attached to the final form of this study. Aggregate data will be presented representing averages or generalizations about the responses as a whole. All data will be stored in a secure location accessible only to the researcher and her advisor. Upon completion of the study, all information will be destroyed. Final aggregate results will be made available to participants upon request, such as a link to the student's honors thesis located in the JMU Scholarly Commons.

Participation & Withdrawal

Your participation is entirely voluntary. You are free to choose not to participate. Should you choose to participate, you can withdraw at any time without consequences of any kind. However, once your responses have been submitted and anonymously recorded you will not be able to withdraw from the study.

Questions about the Study

If you have questions or concerns during the time of your participation in this study, or after its completion or you would like to receive a copy of the final aggregate results of this study, please contact:

Alexandra Hoen   Scott Lunsford
WRTC   Honors
James Madison University   James Madison University
hoenag@dukes.jmu.edu   lunsfoss@jmu.edu

Questions about Your Rights as a Research Subject

Dr. David Cockley
Chair, Institutional Review Board
James Madison University
(540) 568-2834
cocklede@jmu.edu

Giving of Consent

I have read this consent form and I understand what is being requested of me as a participant in this study. I freely consent to participate. The investigator provided me with a copy of this form through email. I certify that I am at least 18 years of age. By clicking on the link below, and completing and submitting this anonymous online survey, I am consenting to participate in this research.

http://jmu.co1.qualtrics.com/jfe/form/SV_6RU5o6NN9dJg0Sx

This study has been approved by the IRB, protocol # 18-0171

Alexandra Hoen
Writing, Rhetoric and Technical Communications
Student at James Madison University
Class of 2018

Appendix C

The Effects of an Undergraduate Research Journal on Student Professionalization

Start of Block: Current students

Question #1:
Are you a current student at James Madison University? If so, what year are you?
- Yes, Freshman (1)
- Yes, Sophomore (2)
- Yes, Junior (3)
- Yes, Senior (4)
- No, I'm graduated (5)

Question #2:
Display This Question:
*   If Are you a current student at James Madison University? If so, what year are you? != No, I'm graduated*

What is your current major(s) at JMU?
_____

Question #3:
Display This Question:
*   If Are you a current student at James Madison University? If so, what year are you? != No, I'm graduated*

✳

What is your role in JMURJ?
- Editing team (1)
- Marketing team (2)
- Design team (3)

Question #4:
Display This Question:
*   If Are you a current student at James Madison University? If so, what year are you? != No, I'm graduated*

How many semesters have you spent with JMURJ?
_____

Question #5:
Display This Question:
*   If Are you a current student at James Madison University? If so, what year are you? != No, I'm graduated*

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What initially made you interested in joining JMURJ?

_____
_____
_____
_____
_____

Question #6:
Display This Question:
If Are you a current student at James Madison University? If so, what year are you? != No, I'm graduated

What are your plans for after graduation? Is there a particular field you wish to go into?

_____
_____
_____
_____
_____

Question #7:

Display This Question:
If Are you a current student at James Madison University? If so, what year are you? != No, I'm graduated

Did you become an editorial board member for JMURJ in order to build the skills you would need for your future job?
- Yes (1)
- No (2)
- Somewhat (3)

Question #8:

Display This Question:
If Are you a current student at James Madison University? If so, what year are you? != No, I'm graduated

What skills, if any, do you feel have improved due to your involvement with JMURJ?

	No improvement (1)	Barely improved (2)	Somewhat improved (3)	Greatly improved (4)	Unsure (5)
Editing (1)	●	●	●	●	●
Marketing (2)	●	●	●	●	●
Design (3)	●	●	●	●	●
Communication (4)	●	●	●	●	●
Leadership (5)	●	●	●	●	●
Collaboration (6)	●	●	●	●	●
Research (7)	●	●	●	●	●

Question #9:

What class activities, if any, do you feel assisted in improving the skills previously mentioned?

- Editing (1) _____
- Marketing (2) _____
- Design (3) _____
- Communication (4) _____
- Leadership (5) _____
- Collaboration (6) _____
- Research (7) _____

Question #10:

How confident are you in your skillset now for your current profession?

	0	10	20	30	40	50	60	70	80	90	100

Confidence (1)

Question #11:

Is there anything else you would like to add about your experience with JMURJ?

_____
_____
_____
_____
_____

End of Block: Current students

Start of Block: Graduate students

Question #2:

What was your major(s) at JMU?

_____

Question #3:

What was your role in JMURJ?
- Editing team (1)
- Marketing team (2)
- Design team (3)

Question #4:

How many semesters did you spend with JMURJ?
_____

Question #5:

What initially made you interested in joining JMURJ?
_____
_____
_____
_____
_____

Question #6:

What is your current occupation?
_____
_____
_____
_____
_____

Question #7:

Did you become an editorial board member for JMURJ in order to build the skills you would need for your current job?
- Yes (1)
- No (2)
- Somewhat (3)

Question #8:

What skills, if any, do you feel have improved due to your involvement with JMURJ?

	No improvement (1)	Barely improved (2)	Somewhat improved (3)	Greatly improved (4)	Unsure (5)
Editing (1)	●	●	●	●	●
Marketing (2)	●	●	●	●	●
Design (3)	●	●	●	●	●
Communication (4)	●	●	●	●	●
Leadership (5)	●	●	●	●	●
Collaboration (6)	●	●	●	●	●
Research (7)	●	●	●	●	●

Question #9:

What class activities, if any, do you feel assisted in improving the skills previously mentioned?
- Editing (1) _____
- Marketing (2) _____
- Design (3) _____
- Communication (4) _____
- Leadership (5) _____
- Collaboration (6) _____
- Research (7) _____

Question #10:

How confident are you in your skillset now for your current profession?

0   10   20   30   40   50   60   70   80   90   100

Confidence (1)

Question #11:

Is there anything else you would like to add about your experience with JMURJ?

_____
_____
_____
_____
_____

End of Block: Graduate students

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