Developing research competence through a student-run peer-review journal at higher education institutions of Kazakhstan

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Abstract

This paper seeks to better understand the general institutional characteristics and the specific participatory activities that help students in higher education develop research competence. This paper presents the first part of an ongoing mixed methods study which uses a quantitative survey of authors (N=30), peer reviewers (N=35) and editors (N=10), followed by qualitative interviews (N=9) of selected representatives from each role, in order to identify and evaluate the ways in which participation in a student-run peer-reviewed journal contributed to developing research competence. In this part, we discuss the state of scholarly research in Kazakhstan, and provide a definition of research competence, and present the methodology employed in this study. The second part of the study will identify strengths of the student-run project, opportunities for improvement, and considerations for application in similar contexts to improve research competence. In this way, it makes a concrete step toward understanding how to improve scholarly research in Kazakhstan.
Keywords: research competence, higher education, student publication, organizational socialization

Introduction

Higher education in Kazakhstan has evolved significantly in the last decade. As noted by the OECD (2017), educational reforms in the country are expansive, addressing topics ranging from preschool to higher education. Kazakhstan's recent efforts to develop research capacity of its higher education institutions have made it a regional leader in publishing research. However, within higher education, reports indicate a continued need for strengthening six key areas: quality, access, internationalization, research and innovation, funding and governance (OECD, 2017, p. 6). A particularly relevant concern, as Klemenkova (2017) warns, is the state of scholarly research as a whole in Kazakhstan, including falsified results, unsound research methods, and preferential citations, all of which undermine the quality of scholarly work. Researchers suggest that such research concerns are mainly led by an excessive pressure on students and researchers to meet a quota of published articles, coupled with a poor understanding of research methods and inadequate funding (Mizimbayeva, Mankesh, & Survutaite, 2015; Shamatov & Isenova, 2016). These aspects coupled together reveal significant concern for both research design and output.

Without sufficient supports in place for developing scholars, Klemenkova (2017) explains that Kazakhstani researchers struggle to develop their research. The lack of supports and exemplars for developing and implementing internationally accepted research practices are problematic and are notable within the humanities and social sciences (Klemenkova, 2017). These constraints are not unique to Kazakhstan but also faced by scholars in other countries. For example, in Pakistan,

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university students struggle with access to equipment and mentoring to support acquisition of research skills (Naoreen & Adeeb, 2014). Despite the negative findings, there is room for hope. International higher education research points to potential solutions dependent upon the local and global context to support researchers, including students and faculty (Crossley & Holmes, 2001). While some universities are focusing on encouraging a collaborative research culture (Billot & Codling, 2013), others have concentrated efforts to support those at beginning of the academic pipeline, graduate students (Gardner, 2008).

To address this issue and to promote research competence, one Kazakhstani university has created a student-run peer-reviewed journal, where with faculty guidance graduate students and alumni author, review, edit and publish research articles. In this way, the journal represents an exercise in developing student governance, leadership, and research competence. Employing Tierney's (1997) and Gardner's (2008) understanding of graduate student learning as a process of socialization into an organizational culture, we aim to better understand the general institutional characteristics and the specific participatory activities that help students develop research competence. It is suggested then that a student-run scholarly journal may contribute to developing research culture in multiple ways, such as through giving explicit opportunities for co-creative socialization. To that end, this article examines the development of research culture as seen through a student-run peer-reviewed journal. In order to identify and evaluate the ways in which participation in the journal contributed to developing research competence, this study uses a mixed methods approach, including quantitative survey of journal authors (N=30), peer reviewers (N=35) and editors (N=10), followed by qualitative interviews (N=9) of selected representatives from each role. This study identifies strengths of the student-run project, opportunities for improvement, and considerations for application in similar contexts to improve research competence.

Defining Research Competence

In order to address the problem discussed above, we need to understand the concept of research competence. Various definitions exist, including the six components of the *Australian and New Zealand Information Literacy Framework* (ANZIL) (Bundy, 2004), Schlosser and Kahn's (2007) nine criteria to evaluate research competence, and Willison and O'Regan's (2007) model which draws together elements from the ANZIL standards (Bundy, 2004) and Bloom's Taxonomy (Bloom et al., 1956). By combining the essential components of these models, we developed a working definition of research competence, which includes the following six components: 1) *inquisitiveness*, the ability to identify meaningful research questions; 2) *planning*, the ability to design a research project using an appropriate method; 3) *critical evaluation*, the ability to analyze and evaluate research literature and findings; 4) *organization*, the ability to carefully and

systematically collect, store and analyze data; 5) *knowledge construction*, the ability to build on the work of others to create new ideas; and 6) *communication,* the ability to share and present those new findings and insights. These elements become the foundation of the student survey, as we seek describe and evaluate students' research competence.

Organizational socialization and cultural change in higher education

In our goal of understanding research competence at HEIs in Kazakhstan, we turn now to address the ways that HEIs in general change their organizational culture, and the ways new members of the academic community are accepted into that organizational culture.

Tierney's (1997) work on *organizational socialization* provides a useful framework to discuss the process by which students, faculty and staff in HEIs interact and change over time. In brief, the term refers to the various ways in which new members in an organization "understand and incorporate… symbolic and instrumental [activities] that exist in the organization and create shared meaning" (p. 3). More broadly, Gardner (2008) defines socialization as "the process through which an individual learns to adopt the values, skills, attitudes, norms, and knowledge needed for membership in a given society, group, or organization" (p.126). When students receive feedback on their word choice, or are penalized for plagiarism, or are expected to complete an ethics review process before conducting research, they are being socialized into a certain set of values, skills, attitudes and norms that the organization collectively holds.

Weidman et al. (as cited in Gardner, 2008) sees socialization of graduate students as a four-step process, including *anticipatory*, *formal*, *informal*, and *personal* stages. In the first stage, students are first exposed to the new roles, attitudes, procedures, and rules of the school, which they get from syllabi, assignment guidelines and program handbooks. In the second, students receive formal instructions and feedback about their behavior. Mentoring, training and collaborative work with faculty members fall in this stage. In the third, informal interactions between students, like group projects and peer evaluation tasks, reinforce the community norms. Finally, students internalize the new ways of doing things, thereby becoming accepted members of the majority group. For example, experienced members of an academic community have a certain way of searching for information, citing sources, presenting their ideas, and analyzing the ideas of others, all like it is second nature.

Tierney (1997) highlights both a simplistic, modernist view of induction into an organizational culture, and a more nuanced, postmodernist view of this socialization process. Following a modernist view of organizational socialization, "the new recruit's task is to learn the cultural processes in the organization and figure out how to use them" (p. 4). This view implies that socialization is something that can be done well or poorly, and that any deficiencies in an

organization to socialize its new members can be "fixed," either by better training and support on the part of the organization, or better adaptability and hard work from the new members. In this case, culture is a tangible concept that can be learned. If newcomers are having difficulty adjusting to the organization's culture, the organization should be doing more to train and support its new members. Newcomers, for their part, should be actively adapting to a concrete, agreed way of doing things (Tierney, 1997).

The implications of this view are evident in more recent literature. As Gardner (2008) argues, HEIs should provide more support for doctoral students, as students struggle to adapt to new ways of doing things and drop out at surprising rates. Support systems can come in many ways. For example, Ion and Ceacero (2017) describe at length the way young researchers learn by working with senior lecturers, and although the different peer groups (senior researchers, junior researchers, administration) in the university have distinct cultural values and norms, it is possible for newcomers to be assimilated into the established culture. Furthermore, Mizimbayeva et al. (2015) see research culture as personal characteristic that students should develop or gain. These authors seem to view the "culture" of academia as a set of norms that HEIs should help students and early career researchers to adopt.

A postmodernist view of *organizational socialization*, on the other hand, recognizes that culture is "constantly being re-created" and therefore is not something that one can acquire through socialization (Tierney, 1997, p. 6). Socialization is a give-and-take, co-creative process. Tierney sums up this view nicely:

> Culture is not waiting "out there" to be discovered and "acquired" by new members. The coherence of an organization's culture derives from the partial and mutually dependent knowledge of each person caught in the process and develops out of the work they do together. Culture is not so much the definition of the world as it is, but rather a conglomeration of the hopes and dreams of what the organizational world might be. (p. 6)

According to this view, organizations seeking to improve the ways they socialize new members should instead be seeking to re-imagine the organization itself. In contrast to the focus of assimilating recruits into becoming "us", Tierney (1997) emphasizes the need for organizations to learn and change, allowing for diversity and creativity, and seeing the organization as a "we" made of both new and old members in the process of change.

Although these two views—the modernist and post-modernist—may initially appear mutually exclusive, it is possible to adhere to parts of each. McAlpine (2015) seems to do this by championing the *individual agency* of early career researchers, while simultaneously reminding us of the need for *structures* that support learners in a new environment. Organizational culture then

becomes personally defined from person to person, but both the individual and the group share responsibility for developing and improving it in practice. In our discussion of developing research competence, we view HEIs as a family of related working environments. In each HEI, students develop research competence through learning activities that model the norms, attitudes, and values held by that HEI, and to some extent we can define and communicate our shared understanding of research competence. The aim here is therefore largely modernist, as we aim to describe the ways a student peer-reviewed journal can contribute to the development of research competence, in order then to improve the ways we and other HEIs socialize our students into these practices. At the same time, we recognize the many ways that HEIs differ, by region, size, specialization, prestige, funding, and organizational structure, not to mention the personal, cultural, linguistic, and social values that student and faculty in those HEIs bring to their community. In this sense, each HEI is responsible for working together with its students and faculty to define and support their own organizational culture.

Developing research competence: International HEI experiences

Higher education institutions (HEIs) worldwide aiming to develop students' research capacity have found that this issue comprises psychological problems, insufficient academic training, physical barriers, lack of facilities, lack of research experience. In this section, we discuss these specific problems and the solutions or suggestions presented in various contexts.

Broadly speaking, creating the conditions for an efficient development of research competence stems from a thorough planning of a HEI's goals; without it, the efforts made to develop research competence would eventually hinder students' academic performance and research activity. Crossley and Holmes (2001) point out the challenge of determining goals and steps for developing the university in accordance with international standards and the local context. To ensure following high standards set by well-developed countries does not impede achieving the goals relevant to the local context of developing countries, Crossley and Holmes (2001) suggest that HEIs start long-term strategic planning by locating the local issues that need solving.

However, a well-structured strategic plan does not guarantee efficient development of students' research competence if the faculty and staff have different expectations of what skills and knowledge students should have. Brooks and Monirith (2010) recommend examining the level of research knowledge and skills of students first, and then to determine faculty members' understanding of the research competence and perceptions of a student who obtains sufficient skills and knowledge. Locating the gap between these two points would then provide the hint of the work that is needed.

Both the most predictable challenges of developing research competence—lack of funding or facilities and insufficient research methods training and experience—and their effects on certain

individuals should also be considered (Brooks & Monirith, 2010; Naoreen & Adeeb, 2014). For instance, the mixed method study conducted by Naoreen and Adeeb (2014) has identified an overarching problem that Pakistani students face: embarrassment and insecurity when it comes to research work. They report that these feelings are generally caused by a lack of research knowledge and experience, which leads students to underestimate their research abilities. Likewise, the scholars agree that these issues might be solved by extensive teaching of both theoretical and practical basics of research, and providing research opportunities to students who want to assist in conducting studies.

In addition to augmenting teaching, Billot and Codling (2013) highlight that active cooperation of the experienced and the emerging researchers is instrumental in overcoming barriers of various kinds. They assert that by working together, sharing experience, and assisting each other, graduate students can obtain confidence, practical knowledge and, most importantly, space for sharing the work they conduct. Brooks and Monirith (2010) add that this collaboration between researchers can raise the spirit of individuals. The culture of research partnership of this kind can also stimulate an efficient alliance of faculty (Crossley & Holmes, 2001), which would surely integrate the efforts of various HEIs.

Developing research competence: Kazakhstani HEI experiences

Despite the few number of studies dedicated to developing students' research competence in Kazakhstani HEIs, there is a baseline to compare with international examples. This comparison helps to further differentiate which similar issues appear when Kazakhstani universities encourage their students' research activity, and which issues are unique to the local context.

In order to encourage students' research activity, Kazakhstani universities set requirements for graduate students to publish a certain number of scholarly articles while studying at master and doctoral levels. Crossley and Holmes (2001) argue that this type of requirement raises unnecessary challenges, as when rather high standards are put in place without considering the local context. Consequently, a lack of research awareness and unrealistic expectations that universities have for their graduate students may contribute to a formalistic attitude towards research and publishing activity (Klemenkova, 2017; Shamatov & Isenova, 2016). For instance, to meet the requirement of publishing seven articles in three years of PhD studies, students submit their work to "fictitious" or "predatory" journals which require authors to pay for publishing (Shamatov & Isenova, 2016, p. 68).

Furthermore, research culture and specific research method training can be lacking within Kazakhstani HEIs. Graduate students need effective and extensive research methods courses where they would learn various aspects of research culture in a holistic way (Mizimbayeva, Mankesh & Survutaite, 2015). To do so, better training of Kazakhstani HEIs faculty is also needed. As Shamatov

and Isenova (2016) revealed, research supervisors whose job is to teach research methods sometimes lack experience themselves.

Not only do Kazakhstani students struggle with conducting research in accordance with the research methodology (Klemenkova, 2017), but they also experience difficulties accessing the resources that might be helpful to learn it (Kairatbekkyzy, 2016). As databases of scholarly journals require very expensive paid subscriptions, students often only have access to open-access journals with low impact factor. Although such databases can contain reliable quality research, students have less exposure to the updated knowledge and this may be a reason why students struggle with evaluating research articles.

Another problem that is often discussed in the Kazakhstani context is students' low proficiency in English, which limits their chances to write and publish papers in widely-read, reputable international journals. Students' insecurity about their poor English significantly adds to their anxiety levels (Klemenkova, 2017). However, Shamatov and Isenova (2016) emphasize that developing students' research competence should not necessarily set a goal of conducting and reporting studies only in English. There is also a need to enhance the status of Kazakhstani journals where articles in Kazakh and Russian would be published.

In summary, Kazakhstani and international HEIs appear to encounter common challenges in developing research competence, including a lack of research methods knowledge and practical experience, which may lead to anxieties and a lack of confidence in writing and publishing academic work. To address these issues, it is necessary to understand the local context and capabilities of local researchers. Research on Kazakhstani HEIs report specific challenges, including low English language proficiency, an emphasis on English language as the favored language of publication, and the difficulty of meeting ambitious requirements to publish in high impact factor journals. The literature suggest better training of both faculty and students, raising the status of local research journals publishing in local languages, providing access to reliable, high-quality research, and providing more practical learning experiences for students to learn and gain confidence.

Methodology

The experiences and suggestions from both international and Kazakhstani scholars seeking to improve research competence indicate that graduate students can benefit from structured opportunities to participate and collaborate in research activities. As we have defined research competence as skill in the categories of *inquisitiveness*, *planning*, *critical evaluation*, *organization*, *knowledge construction*, and *communication*, and as we understand organizational change as a *co-creative socialization process*, we expect that interactive research activities--including mentoring, collaboration, student-student and student-faculty communication, leadership and decision-making

roles, and creative projects--will have a positive influence on developing research competence. It is those activities in a student-led peer review journal that become our focus. As these questions have yet to be sufficiently explored in Kazakhstani HEIs, this section will present the methodology used to describe and evaluate student research competence.

Research design

The study will apply a mixed methods research design in order "to simultaneously collect both quantitative and qualitative data, merge the data, and use the results" (Creswell, 2014, p. 570) to better understand the research problem. Specifically, a mixed methods sequential explanatory case study design including a quantitative survey and qualitative semi-structured interviews will be used to describe graduate students' research competence development at a higher education institution in Kazakhstan. A case study research design is the most fitting for our analysis since our study is dedicated to answering "how" and "what" questions about a given phenomenon (Yin, 1994).

In our attempt to understand the extent to which a student-led scholarly journal develop student research competencies, we have identified three sub-questions: 1) What specific research competencies need to be developed in Kazakhstani researchers? 2) To what extent do authors and peer reviewers use and enhance those competencies in the journal project? 3) What challenges and opportunities does this project present to its participants?

Research Site

In 2015, students, faculty, graduate students and alumni of Nazarbayev University Graduate School of Education created *NUGSE Research in Education,* a student-run peer-reviewed journal. This is an open-access research journal, where the graduate students and alumni with faculty guidance author, review, edit and publish research articles. According to the journal's editorial policy, the journal, focused on educational reform in Kazakhstan, "presents original, English-language, scholarly work in the form of empirical studies, critical book reviews, theoretical and policy analysis papers" (NUGSE Research in Education, 2015). The journal involves an editorial board, readers, authors and a bank of peer reviewers that tend to be students and emerging scholars. This site represents a Kazakhstani HEI that demonstrates a commitment to developing its students' and faculty research competence and is accessible to the researchers.

Data collection instruments, participants and sampling procedures

The data collection procedure and instruments will be based on the mixed methods sequential explanatory design. We will collect a quantitative survey of authors (N=30), peer reviewers (N=35) and editors (N=10), followed by qualitative interviews (N=9) of selected representatives from each role. The data collection process will consist of two stages: we will first collect and analyze the quantitative (numeric) data; and then collect and analyze the qualitative (text) data, which will help

to explain the quantitative results collected in the first stage (Ivankova, Creswell & Stick, 2006). The participants will include student readers, authors, peer reviewers and editors self-enrolled in the online journal system (nugserie.nu.edu.kz), representing a census approach to the quantitative stage, and a non-random sampling in the qualitative part (Creswell, 2014). The study will target the entire population of current journal participants, but only the participants who complete the survey will be selected to participate in the interviews, given their availability and willingness to be studied.

Data analysis

The quantitative data from the surveys will be coded and analyzed using the SPSS Windows software package. We will analyze the qualitative data by employing Creswell's six steps of data analysis (2014, p. 261), including coding, "the process of segmenting and labeling text to form descriptions and broad themes in the data" (p. 267). All interviews will be conducted in English, audio-recorded, transcribed manually and organized into the following categories: strengths of the student journal project, opportunities for improvement, and considerations for application in similar contexts. Within each of these categories, thematic codes will be sought through a constant comparative process of looking through the data, reading and assessing themes, within an iterative process (Glaser & Strauss, 1967).

Conclusion

Throughout the world, graduate students struggle with developing research competence. For those studying within HEIs which have yet to fully establish an internationally recognized research culture, there are additional obstacles. This research addresses noted problems within Kazakhstani HEI research culture and competence and provides insight on a unique approach in this context. Findings will showcase the effects of a student-led peer-reviewed journal as a structure for developing graduate student research competence from general institutional characteristics and specific participatory activities. This works adds to the limited research on HEIs in Kazakhstan, focusing in particular on research culture and student research competence in this context, and adding significant insight into the ways in which a student-led peer-reviewed journal can be utilized as a structure for developing graduate student research competence. Insights from this work will be of interest to other institutional settings within Kazakhstan, and those interested in the development of student research competence in underdeveloped national HEI contexts.

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