Benefits and Issues Arising from a Virtual Collaborative Student-Alumni-Faculty Action Research Project

Sue Marquis Gordon
Fielding Graduate University

Jennifer L. Edwards
Fielding Graduate University

Ramona D. Hollie-Major
DeSales University

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Abstract

Can graduate students in a distance learning environment gain meaningful research experience through a virtual action research project? The answer is an emphatic "yes." The purpose of this paper is to determine the extent to which students seeking an EdD degree can gain research experience through an action research project conducted in a virtual environment and to examine administrative issues that need to be considered when a large group of collaborators undertake a year-long study. The analysis in this paper is based on project documents of the Faculty-Student Mentoring Project, which took place from May 2003 through October 2004, the reflections of the principal investigators, and an evaluation that an alumna volunteered to conduct near the end of the project. The evaluation included two 60-minute focus groups held via conference calls with the student and alumnae researchers. Through a year-long collaborative project that involved 11 students, 5 alumni, and 3 faculty, students and alumni increased their understanding of action research, gleaned valuable information of use to their program, and presented and published. The university also gained valuable information. Conducting action research in a distance environment, however, created some unique issues and valuable lessons that will be helpful for others who want to offer graduate students the opportunity to engage in collaborative research. Faculty who want to work with students at a distance to conduct research would benefit from setting expectations at the outset of the project, providing time for participants to get to know each other, familiarizing participants with the technology they will be using, screening volunteers to determine their levels of expertise and commitment, setting minimum and maximum expectations for participation, having participants work in small task groups before engaging a large group, sharing the project management, providing extensive training at the beginning of the project, and anticipating that online research will require more time than a similar study conducted where the research team can meet face-to-face. (Twenty-two references are included.)

Introduction

One of the advantages of traditional universities for graduate students is the opportunity to engage in ongoing faculty research (Maxwell, Leigh et al., 1995; McCracken, 2004). Indeed, many students choose their universities because of the research focus, and when submitting their application, or later, they may apply to work on a professor's research team (Smallwood, 2004). Graduate assistants have offices that are evident to passers-by, and frequent discussions about ongoing projects infuse a research culture that is observable to all graduate students. Studies have demonstrated that students in mentoring relationships that are focused on research benefit from increased job opportunities and publications (Hager, 2003).

In contrast, in the burgeoning sector of distance graduate education research, opportunities are not readily available (McCracken, 2004). A research agenda for virtual faculty is not as important a requirement for advancement as it is at brick and mortar institutions, and the research that is undertaken may be housed in a different setting or virtually. With faculty research less visible, students' insights into the research process are limited, and their participation in ongoing research is severely restricted. The lack of research opportunities may be especially problematic for distance learners who are older returning students who may have obtained their initial degrees decades ago and/or who may have a master's degree that did not require them to conduct research. When it comes time to conduct the research for their dissertation, students without research experience are at a distinct disadvantage.

Labaree (2003) pointed out that teachers especially may have a difficult time gaining a research perspective because in research, they are required to shift "their cultural orientation from normative to analytical, from personal to intellectual, from particular to universal, and from the experiential to the theoretical" (p. 16). Thus, in order for students to become successful researchers, the need to engage in research in schools of education is especially important. The purpose of this paper is to determine the extent to which students seeking an EdD degree can gain research experience through an action research project conducted in a virtual environment and to examine administrative issues that need to be considered when a large group of collaborators undertake a year-long study.

The literature on virtual teaming to conduct research is growing. Examples have been published of faculty colleagues at different universities (Staniforth & Harland, 2003), students from different universities (Scott, Cramton, Gauvin, Lobert, Steinke, & Patteron, 1997), undergraduate students (Burke & Cummins, 1992; Elmes-Cranhall, 1992; Hutchinson, 1992), master's level students (Aune, 2002), pre-service teachers (Saurino & Saurino, 2003), and university faculty with teachers in public schools (Guteng, Tracy, & Chappell, 2000). Teams also have worked successfully to conduct research in classes (e.g., Ludwig, 1999), including in action research courses online (Aune, 2002); however, little has been written about teams of faculty and graduate students at distance universities conducting action research projects that occur outside of the regularly scheduled curriculum.

Approach

Action-oriented research was one of the guiding principles in the design of the distributed learning school that was the setting of this research. It is also one of the course requirements for the EdD that is awarded. The students are mature adults, well ensconced in their careers, which almost all pursue full-time. In order to meet the students' needs, the school uses andragogical principles, or learning designed specifically for adults (Knowles, 1978). This approach involves problem-centered learning, enables learners to bring their past experience to bear on the topic, and encourages them to apply their learning. The role of the faculty is to facilitate and scaffold the students' learning.

Action research compliments andragogy in that the participants are independent and self-directed learners, and they apply their learning. This match may be seen in Greenwood and Levin's (1998) definition of action research, which is "social research carried out by a team encompassing a professional action researcher and members of an organization or community seeking to improve their situation" (p. 4). They depicted the main criteria of action research as research, participation, and action. Research is more than self-reflection; it is systematic inquiry. The participation of the individuals who are concerned about an issue may vary from acting as the researchers themselves, to engaging a professional action researcher to carry out or consult on the project. Goals are to bring about a positive change in practice and to empower the participants. Another criterion of action research is that it takes place in a cycle of activity. Stringer, for example, described cycles of looking, acting, and thinking, while Holly, Arhar, and Kasten (2005) described repeated cycles of acting, observing, and reflecting. The overall goal is continuous improvement (Glanz, 1998).

Properly structured, an action research project focusing on mentoring had the potential to provide an authentic learning experience in which mature doctoral students could learn about, try out, and engage in research. Such a project could not only benefit the program; it could add to the literature about telementoring. In order to model an authentic action research experience, we tried to "live" by a design that featured the key components of action research design. The project had to be participatory, be empowering, and initiate a cycle of research of importance to the participants (Glanz, 1998; Stringer, 1999). Therefore, members of the constituencies involved in mentoring, including students, alumni, and faculty, were empowered to jointly design and conduct the research.

Method

The analysis in this paper is based on project documents of the Faculty-Student Mentoring Project, which took place from May 2003 through October 2004 (Gordon, Edwards, Brown et al., 2005), the reflections of the principal investigators, and an evaluation an alumna volunteered to conduct near the end of the project. The evaluation

included two 60-minute focus groups held via conference calls with the student and alumnae researchers.

Project Description

At the time the project was initiated, the school of education in which the project was housed had no program-sponsored opportunities for students to engage in action-oriented research. When a Call for Proposals to write a book chapter on distance mentoring was passed around at American Education Research Association (AERA) annual meeting in 2003, the opportunity to conduct research on distance mentoring, which was another key component in the school, seemed too good to miss. In order to determine interest in such an endeavor, the first author sent a general email inquiry to students, alumni, and faculty asking if anyone was interested in conducting a study "to improve mentoring to increase students' success in completing the program and in achieving careers as top-rated scholar-practitioners." Twenty students, 11 alumni, and two faculty members responded positively, making an action research project a "go," albeit a much larger project than was originally anticipated.

It was obvious that in order to successfully undertake a project with a large number of people, resources would be needed for conference calls to support on-line conversations. It also became clear that managing the project would require more administrative time and effort than was originally expected. For these reasons, the three faculty members applied for a university grant of $7,700, which was received. The funds were to be used for seed money to establish the project and supplies, for faculty workload compensation, for extra student work on papers and presentations, and for an evaluation of the success of the project as it neared completion.

The Faculty-Student Mentoring Project was formally commenced by an initial group of seven students, one alumna, and the three faculty members who were at the school's annual National Session. At a meeting, they decided to focus on the research question, "What are successful mentoring relationships?" In addition, they decided to gather information from students, alumni, and faculty via telephone interviews. As the project design and schedule became clarified in the fall, some of the individuals who initially expressed interest found that they could not participate. This left a core design group of three students, two alumni, and three faculty members. The group, with some additions and deletions, continued to meet via conference calls, email, and threaded discussions to develop the interviews. In order to compare responses across constituencies, the interviews for students, alumni, and faculty were the same, except for minor changes such as present and past verb tense.

Project work was not course-based. At the university, students gain academic credit by contracting with individual faculty for courses known as knowledge areas. Knowledge areas are akin to independent studies in other universities. Some of the students contracted for knowledge areas related to the mentoring research with the project

faculty. Others asked faculty readers not connected with the project if they could use the project experience as part of their contracted work with them.

Additional students and alumni were recruited to help conduct the interviews, bringing the team to 12 students, four alumni, and three faculty members. All participants were trained in interview skills using a series of PowerPoint presentations online in conjunction with training groups, which met via conference calls. Interviewers first interviewed each other and then discussed the process and any issues that arose with the group. A faculty member was assigned to go over each student's and alum's first interview. With the faculty member's OK, the interviewers had permission to follow up on their remaining allotted four interviews. In order to maintain confidentiality, one faculty member was designated to draw the samples of individuals to be interviewed. Life issues intervened, greatly delaying completion of this task, and the faculty member eventually withdrew from the project. The delay brought the time for interviewing to the holiday season, which was clearly a bad time. Calls and emails to potential interviewees were not returned. It was necessary to extend the time period for interviews well into the New Year.

Interviewers reported continuing to have difficulty making contact with the individuals who were assigned to them so that a number of interviewees had to be replaced. Some interviewers completed their tasks, while others asked for more time because of family or business exigencies. Because of our desire to reach a large proportion of each sample, this phase of the project was extended yet again, which frustrated those who had worked in a timely fashion and were waiting to analyze the data. Life events caused two interviewers to drop out of the university. Other students were able to add some interviews to their own load, but they were not able to interview all of the departing students' missing interviewees. Ultimately, in order to complete the analysis within a year, we had to cut off the interviews, despite the fact that some interviewers had not completed their quotas. Student researchers interviewed 41 respondents, which was 78% of the randomly selected sample. Alumni researchers interviewed 15 graduates, 75% of the alumni sampled, and the faculty interviewed their target number of 10 faculty members.

During the analysis phase, the team met bi-weekly via conference call. In preparation for doing the analysis, the participants read and discussed several selections related to qualitative analysis. Each participant then was given a small sample of responses from one of their constituency's interview questions to analyze. The group as a whole discussed and compared the within group and between group findings. As the participants' understanding of data analysis grew, they were given more data to compare. When the team met as a large group, the alums spoke with authority. This was good in that the alums role modeled the expertise the students were hoping to gain. The students, however, began to defer to the alums. To counteract this, we divided the students and alumnae into separate groups, each with a faculty member. The participants' skills increased to the point where each person was given a section of the interview to analyze and to present the findings at the school's annual National Session. After the

presentation, a subset of four alumnae, three students, and two faculty members continued to meet for another three months to write up the results for publication.

Results

Benefits

The mentoring project findings have contributed to the body of knowledge on telementoring, given participants the expertise they were seeking, and engaged them in scholarly activities, including publishing and networking at professional meetings, that would not have been available to them otherwise. More specifically, the benefits were:

- Participants increased their knowledge.
    - In the focus group evaluation, students reported that they learned a lot about action research, built confidence in their ability to do research, and enjoyed the experience. They recommended that similar opportunities be made available to other students.
    - Alumnae also reported being grateful for the experience. They found that the collaborative work gave them research skills that they had not had as part of their graduate experience. They, too, urged that similar research opportunities be made available to alumni in the future.
    - Faculty members were readily aware of the participants' gain in expertise through their interactions around project work and through the academic papers they received related to course work in Action Research, Forces of Motivation, Program Evaluation, and Area of Specialization.
    - Faculty gained skills in using the online environment and conducting research at a distance.
- Participants gained writing and presentation experience.
    - Ten members of the team presented their findings to the university as part of the annual National Session.
    - Three students prepared a poster for the university's National Session poster session.
    - One alumna and two student papers were presented at the International Mentoring Association.
    - One alumna presented at Association for Supervision and Curriculum Development (ASCD).

- Two faculty members and one alumna presented at AERA.

- Three students, four alumni, and two faculty members wrote a book chapter that was published (Gordon, Edwards, Brown et al., 2005).

- The university and the alumnae gained a special relationship.

  - The alumnae and the university are working on creating post-doctoral opportunities that will benefit all alumni.

- The university gained valuable information.

  - What students and alumnae felt was effective mentoring was presented to faculty members at their 2005 Summer Faculty Retreat.

  - More specific information on mentoring and the roles and responsibilities of mentor and mentee is now incorporated in to the orientation session for entering students.

- The project led to a second round of research.

  Building on the findings from the project, a student initiated a pilot student-to-student mentoring project for her dissertation. As a result of her findings, discussion is under way to initiate a student-to-student mentoring program.

- The participants developed special collegial relationships.

  A powerful benefit felt by faculty, as well as alumni and students, was the development of working relationships within and between every constituency that were enlightening, energizing, and fun. Many of these relationships continue well after the conclusion of the project.

How some of these benefits translate for a particular individual can be seen from a student, who reported:

> The mentoring project was an invaluable experience for me. Participation in the mentoring project opened new avenues of critical thinking, individual perspectives, and understanding for me. As a result of my research and participation in the mentoring project, I was selected to present at the International Mentoring Association last spring. The research for the IMA presentation led to my dissertation topic. Finally, it afforded me the opportunity to work with a dynamic group of faculty, alumnae, and students.

Issues

Balancing the multiple purposes of the virtual project, which were to provide students and alumni with research knowledge and skills, as well as to conduct a meaningful action research project raised some management issues that may be of interest to others considering undertaking collaborative action research studies, whether locally or virtually. While some of the issues are relevant to any research project, others arose or were magnified by the action research approach and/or the distance learning environment.

Timing of research cycles vs. academic schedule.

In the university's distributed learning environment, students adhere to their own timing of starting and completing courses rather than a university-wide schedule. This meant that for project work, we could not predict busy or slack times in the schedules of the participants so that we could plan an extended project meeting, for example, during a vacation period. That project activities extended considerably beyond the length of time that students typically engage in a knowledge area was problematic for some. In the evaluation, participants mentioned scheduling as an issue and suggested that early, more frequent communication might help to shorten the timeline.

*Time and effort***.**

How much time and energy can be expected/demanded from alumni who volunteer for the experience and from students who want to incorporate their work into a knowledge area to gain academic credit? Because of the emergent nature of the project in the beginning when participants signed on to the project, it was difficult to set expectations because the goals, tasks, and timelines had not yet been determined. Because commitments of time and effort were ambiguous and participants' levels of research expertise were unknown, it also was difficult to predict what kinds and how much training would be needed, and therefore, what level of commitment should be expected from each participant.

*Assessing competence***.**

The faculty only knew most of our student and alumni participants through our periodic virtual meetings, yet we had to determine when the participants were ready to move from training to become research assistants and then to become full collaborators. Without a history of ongoing interactions and without the visual cues that can be gained from the project participants in face-to-face project meetings, it was more difficult than usual to determine how well each person understood the training material and where the group as a whole stood.

A related issue was that with our collaborative approach, all work was shared online, making each individual's work visible to everyone else. A poorly completed task required a public response that was supportive of the participant, instructive to all, and led to an appropriate product that could be merged with others' work. In a face-to-face

situation, such interactions are passing moments, the details of which are readily forgotten. In the online environment, each person's actions are part of a permanent record. Individual follow-up was a solution both to assess competence to determine training depth and to provide additional responses regarding individual concerns, yet contact had to be done in a timely manner and was time consuming.

Individual costs vs. benefits.

All of the participants indicated that they hoped they would gain research experience through the project. Some students hoped to gain academic credit, while others just wanted the experience for their dissertations. Alumnae aspired to add presentations and publications to their resumes. They also desired that the university acknowledge their participation on their transcript. As project directors, we were continually concerned with whether our volunteer participants were receiving what they had bargained for, how we could make sure that they continued to benefit, and what might throw off the balance so that their participation would become too costly for them. The delicate balance between fulfilling the participants' needs and completing project work could easily be upset by increasing the research load and/or by unanticipated, increased demands in other aspects of their lives. With students in the mid-life "sandwich generation," it was not surprising that life factors led to the loss of some participants before they had completed their responsibilities.

Maintaining worldwide contact.

Maintaining contact at a distance is more difficult than when people see each other on a frequent basis. Connectivity is especially problematic when the participants are older adults who are working full time and have demanding multigenerational family responsibilities. Teachers, for example, cannot be reached while they are in school. Others may travel internationally or be unavailable in meetings. We had no opportunity to catch someone walking down a hall or to ask Sally if she knew how Rose was doing or if she could give a message to Rose. We had to rely on participants responding to messages. Of course, some people are better at doing this than others. In cyber space, it was not unusual for weeks to pass without contact from some individuals, despite repeated efforts to reach them.

Even within the United States, arranging meetings with individuals on the east and west coast was difficult, as free time on one coast often conflicted with working, family, and sleep times on the other coast. Incompatible time considerations frequently limited the number of individuals participating in a meeting. One way we resolved the conflicts was to have two comparable meetings at different times. In addition, with multiple project directors, at least one faculty member was available at every meeting, which helped maintain consistency throughout the work.

Confidentiality.

Action researchers' study of their own practice can lead to issues of confidentiality. In our project, interviewers were instructed to remove all names and identifying information from the data. In addition, faculty members checked all of the interviews for identifying features before they were circulated. Even so, identification of some mentors or mentees could have still been possible. This risk raised questions about the extent to which information could be shared and required confidence in the ethics of the participants. In order to stay away from information that might be threatening or harmful, faculty members deliberately used their influence during the design phase of the project to focus the interview schedule on the effectiveness and not the ineffectiveness of mentoring.

Group management.

Many individuals, at least initially, find it difficult to identify voices and/or to speak up during a telephone conversation. The larger the group, the more difficult these actions are. We searched for the ideal group size and composition in which everyone could learn and work in comfort. Smaller homogeneous groups appeared to work best, at least until participants got to know each other.

Theoretically, by virtue of having obtained their doctorate, one could assume the alumnae were capable of independently overseeing their part of the project. The virtual environment, however, made it especially difficult to assess the qualifications of individuals whom we did not know and could not meet. With the overall quality of the project at stake, initially, we kept some involvement. As the competence of the alumnae became clear, faculty involvement with the alumnae analysis decreased. Nevertheless, the appropriate amount of faculty presence within the student and alumnae groups remained a question throughout the project.

Experience with on-line facilitation.

Given multiple pressures to get started, the project directors did not take the time to set up clear directions for participants to effectively use on-line threaded discussions on our web space or to train participants in this means of communication. This lack led to misplaced comments, frustration, and the use of email instead of threaded discussion. It was a lesson well learned for next time.

Shared project management.

Identifying and balancing the roles of three faculty members so that all three had equal roles was a challenge. At one point, the project directors attempted to have one faculty member be responsible for each constituency. At the same time, someone needed to monitor the project's overall progress and respond to institutional and grant concerns. The emergent, collaborative action research approach affected the project directors as well as the students, as initially, we, too, could not anticipate the time and demands that the final research design would make on us. While the project directors were colleagues, we had never worked closely together before, so we needed to learn about each other's

needs, desires, working styles, commitment, etc. Trying to ferret these out virtually precluded casually going out for coffee to discuss how things stood. All of the issues of communication discussed above for students existed for the project directors, as well.

Work load.

The virtual project greatly increased faculty workload, as it required more interaction time than a similar campus-based project. In a face-to-face environment, more time is available to handle multiple issues in a single meeting, and the pervasiveness of issues is more readily apparent so they can be dealt with when they first arise. It is easier to nod a head to show agreement with an issue that one colleague brings to the table than it is to bring up an issue in an online forum or phone call. As we worked to build a community of practice in which people were at ease with raising personal and community concerns, the needs of individual participants required time-consuming emails and/or phone calls.

Discussion

The extensive list of positive outcomes from this project clearly indicates that virtual collaborative action research projects can enable doctoral students and alumni to gain valuable research experience, to step into the academic community, and to add material for their resumes through presentations and publications. In addition, students, alumni, and faculty developed deep and lasting relationships with their colleagues. These findings add to the growing literature on the value of online academic collaboration (e.g., Aune, 2002; Burke & Cummins, 2002; Elmes-Cranhall, 1992; Ludwig, 1999).

In addition, our findings join those of others working at a distance to point out that virtual teams pose some special administrative challenges. This is particularly the case if one is trying to adhere to the participatory characteristic of action research. The action research approach differs from the more typical emphasis on faculty research such as the faculty-student research collaboration at the undergraduate level discussed by Elmes-Cranhall (1992) in which the goal was to increase faculty research productivity. We approached the project with the desire to assist students in publishing, rather than with the desire to further our own publishing careers. Having conducted the project, our experience has been that it is far easier to conduct one's own study as a faculty member than to coordinate the work of a number of students.

The participatory nature of the project meant that the design and therefore the structure and time frame of the project were not known until the project was well underway, which made it difficult for all participants to anticipate their individual work loads and schedules The participatory nature of the project also meant that every individual in the project should carry out his or her project responsibility and that each individual should be given the opportunity to fulfill that responsibility. Distance coupled with busy lives made adherence to schedules once they were developed difficult. Rather than let the project emerge based on the needs and interests of the students, alumni, and

faculty who were involved, it would have been much easier to follow Burke and Cummins' (2002) suggestion that projects should be thoroughly planned before beginning them. Were we to do it again, we would find a compromise position that put constraints but not boundaries on the project, as potentially interested students needed specific timeframe information in order to fit project participation into their schedules. Lacking this, we lost some interested students. Still, a benefit of co-planning the project with the collaborators appeared to be more commitment on the part of everyone who was involved, as they had more ownership in the project. In addition, we found, as did Aune (2002) and Burke and Cummins (2002), that the participants valued the collegial nature of our working relationship.

We accepted into the project anyone who wanted to join. Another means of increasing the predictability of the research and the training required would be through screening possible collaborators, as Burke and Cummins (2002) recommended. This would enable faculty either to more rapidly learn about the backgrounds of potential participants or to accept only those with a certain level of expertise. This raises the issue discussed by Elmes-Cranhall (1992) about the readiness of students to conduct group research studies. Screening decisions might help resolve some of the tension between spending time teaching skills to students and conducting research, which both Elmes-Cranhall (1992) and we discussed.

Like Burke and Cummins (2002), we found that communication was essential to the success of the project. We learned that we needed to schedule regular phone conversations, in addition to communicating on the Internet. This is consistent with the work of Chen (2004), who found that when groups communicating on the Internet did not have nonverbal signals available, important parts of the communication were lost. Collaborators found that it was helpful to identify themselves and specify the date and the time that they posted the message. In addition, Chen found that members of distributed teams didn't understand goals as well as members of teams that met face-to-face, making group process facilitation and structure even more important for distributed teams than for teams that met together.

Our findings also suggest that virtual collaborators need more information about using online methods of collaboration. The findings support McEwen (2002), who found that the quality of the products produced by students collaborating online was directly related to the quality of their communication online. Our discovery that participants were more comfortable in the beginning in small groups rather than large groups also suggests that communication could be improved by providing time at the beginning of the project for participants to get to know one another, as Pauleen (2003) recommended.

Despite the management changes that the findings suggest, they also indicate that participants who are not connected in time and space will continue to respond to pressures in their busy lives, which will make communication and scheduling difficult. Our experience supports Burke and Cummins' (2002) and Aune's (2002) discussions about the need for collaborators to be flexible and willing to change timelines as situations arise and outside obligations take precedence over the project.

With these management issues in mind, our experience supports Hutchinson's (1992) suggestion for faculty to obtain grants for conducting the research. Faculty release time should also be considered. At the same time, however, it is important to recognize that the faculty in our study greatly benefited from collaborating with the students and alumni.

Conclusion

The Internet provides a promising way for virtual teams to carry out research projects that add to the growth of knowledge and provide understanding of and training in research. The management of a collaborative action research project that includes students, alumni, and faculty is impacted by the type of student, the action research approach, and the virtual environment, making it both exciting and challenging to undertake such projects. As others who want to provide an authentic action research experience for their students contemplate such an undertaking, we hope our recommendations that grew out of the lessons we learned will be helpful.

Recommendations

- Rather than leave the design of the project completely open, early on, set some expectations, especially concerning the length of the project and the time commitment of individual participants. Then, design the project to fit these expectations, rather than vice versa.

- Set aside time at the start of the project for participants to get to know each other online and on the telephone.

- Maximize the potential available technology such as online threaded discussions by spending the time at the beginning of the project discussing and using the technology in order to save time and effort later.

- Screen volunteers to determine their levels of expertise and commitment.

- Set minimum and maximum expectations for participation and for the project's schedule.

- Have participants work in small task groups before engaging a large group.

- Consider shared project management if consistent feedback and/or workload may be issues.

- Provide extensive training at the outset of the project.

- Anticipate that on-line research requires more time that a similar study conducted where the research team can regularly gather face-to-face and adjust your schedule accordingly.

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