

LEARNING EXTENSION: REFLECTIONS OF SOUTH ASIAN STUDENTS AT THE UNIVERSITY OF FLORIDA AND PURDUE UNIVERSITY



In this blog, Sravani Pasula, Arati Joshi, and Hema Lingireddy, students studying extension education at the University of Florida and Purdue University, reflect on the range of approaches used in teaching and learning at their respective universities. This blog provides a new perspective to the faculty and students in extension in developing countries.

BEFORE WE START, LET US INTRODUCE OURSELVES.

I am Sravani Pasula. Currently, I am pursuing my PhD in Agricultural Education and Communication (AEC) with a specialization in Extension Education at the University of Florida in the USA. Prior to this, I completed a MSc (Agricultural Extension) from the Kerala Agricultural University, Thiruvananthapuram, Kerala, and a B.Sc. (Hons) in Horticultural Sciences from Sri Konda Laxman Telangana State Horticultural University, Hyderabad, India.

I am Arati Joshi, and I joined the Department of AEC at the University of Florida in 2022 for my master's after completing my undergraduate degree in Agriculture Sciences from the Agriculture and Forestry University, Chitwan, Nepal. Currently, I am pursuing my PhD degree in the Department of AEC.



Students and Faculty at the 2024 Annual Conference of Association for International Agricultural and Extension Education (AIAEE), Orlando, Florida. Image credits: Sravani

I am Hema Lingireddy, and I joined the Department of Agricultural Sciences Education and Communication (ASEC) at Purdue University in 2023 as a doctoral student. I pursued a Masters in Agricultural Extension from the ICAR-National Dairy Research Institute (ICAR-NDRI), Karnal, and a Bachelors in Agricultural Sciences from the Acharya NG Ranga Agricultural University (ANGRAU), Bapatla, India.

Over the past years, we have learned not only new concepts in agricultural extension but also experienced innovative teaching approaches that have offered us an interesting and rich learning experience. Here, we share our insights from studying at the University of Florida and Purdue University, particularly reflecting on the teaching approaches applied at the graduate level (master's and doctoral level) and opportunities that graduate students receive to broaden their skills in research, teaching, and extension. We hope this blog will provide new perspectives to many teachers in South Asia to explore and experiment with a wider range of approaches for teaching extension and other courses in universities.

STUDENT-CENTERED TEACHING

One of the main differences we found between the universities that we are studying in the US and the agricultural universities in India and Nepal is the use of a student-centered teaching approach over a teacher-centered approach. Student-centered learning emphasizes learners' needs and interests, where students decide not just what to study but also how and why to do it. Learner responsibility and activity are central to this approach, as opposed to the traditional didactic teaching approach that places more emphasis on teacher control and syllabus coverage. More importance is given to the student-centered approach when designing course curricula and during teaching at both universities in the USA. An academic institution or governmental body does not design a course curriculum; rather, it is designed by the instructor. This allows instructors flexibility to design courses based on their expertise and student feedback. It is not uncommon for faculty at US universities to design new courses based on students' needs and interests.

USE OF E-LEARNING PLATFORMS

Furthermore, universities use e-learning platforms like Canvas (<https://elearning.ufl.edu/>) and Brightspace (<https://purdue.brightspace.com/d2l/login>) to facilitate online learning and teaching, streamline course management, enhance student engagement, and provide flexible access to educational resources and materials. These e-learning platforms also support various instructional strategies, assessment methods, and communication tools, making it easier for instructors to manage their courses and for students to collaborate and stay informed.

"The transition to Canvas was both surprising and challenging, as I had to quickly adapt to a new way of accessing course materials, submitting assignments, and interacting with instructors and peers. During my master's program in India, I had limited exposure to such advanced digital tools for education."

Sravani

"Similar to Sravani's experience, I had to take help from a peer to understand the use of Canvas for coursework and assignment submission during my first semester."

Arati

“During my first semester, I obtained support from fellow graduate students and course instructors as I tried navigating and understanding the online learning platform (Purdue Brightspace). In addition, the departmental orientation was quite helpful to me in this regard “

Hema

We categorized our experiences of other differences into curricular and extracurricular activities and have described them below.

CURRICULAR ACTIVITIES

Class assignments and its significance in grading

Depending on the course, several assignments are designed for the students to increase their learning and apply such learning to enhance their skills. In contrast to our experiences in India and Nepal, where end-of-semester exams are the ultimate in grading students, here, the mandatory class assignments (submitted weekly or biweekly) play a major role. The student assessment rarely includes a traditional sit-down examination; rather, it includes several methods such as class participation, quizzes, project works, assignments, etc. All the class activities mentioned above carry some weightage in the grading process, and the grades are determined based on their level of engagement in class, the quality of their work in terms of writing and interpretation, and their ability to turn in the following activities on time. Some of the assignments include:

Assigned readings: At the beginning of the semester, faculty change the syllabus (which may include content, textbooks used for the class, and assignments), whenever required, to keep it up to date with the development in our discipline and according to the needs and interests of students. Also, the faculty assigns and schedules specific readings for each week. These readings include textbook chapters, journal articles, videos, and reports. Sometimes, the readings are on interactive social learning platforms, like Perusall(<https://www.perusall.com/>), which provides collaborative annotation tools for increasing engagement among students. Generally, it is expected from the students that they read the assigned readings before class and are ready to discuss them in class or answer quizzes.

Reflecting on our experience, the assigned readings helped us to understand the topic and outline important points that we could contribute to the discussion in the classroom. In this way, all the students share their diverse viewpoints, which, along with the faculty teaching in class, helps in gaining a better understanding of the topic.

“This was surprising for me. In Nepal, the topics are discussed in class, and the teacher takes you over all the major concepts, and then students are given additional readings and assignments as homework.”

Arati

“Initially, it was challenging for me to share my viewpoints in the classroom, as this was something that I never experienced in India. In general, classroom interactions in India mainly involve asking questions. Meanwhile, here, students share their perspectives or experiences on a specific issue. As the classrooms are diverse, we get to hear the experiences of students from other nations, cultures, etc. These discussions are very thought-provoking and informative.”

Hema

Module 2 Understanding Story Structure



Module 2: Understanding Story Structure. (Week of June 19)

The goals for this module are: 1) to expose you to examples of how to structure a science story so that you can create your own story; and, 2) learn a few foundational writing techniques to make your story compelling, 3) deconstruct a Pulitzer Prize winning science story; and 4) learn one model for using science communication theory as a model for structuring a compelling story to overcome bias.

Readings:

- 1) Science News Story-for deconstruction exercise: <http://www.pulitzer.org/winners/kathryn-schulz> Schultz (The Big One) (print version of above in case link is broken) and do the
- 2) Jamieson (2014) – LIVA Model

Also Read Techniques for writing:

- 3) Read Stocking Short-story (Title: The Earthquake)
- 4) Read Blum (Explanatory Writing)
- 5) Baron Leaving the Ivory Tower-(Tips for organizing your pop press story writing).

Assignments: Worksheet: 1) Understanding Story Structure – Complete the worksheet on Brightspace-designed to familiarize yourself with story structure (Schultz) and techniques (Blum, Stocking, Baron). **Hint: This can/ should be done collaboratively.** *In deconstructing a Pulitzer-prize winning science story you will begin to understand the fundamentals of story structure and writing techniques.*

2) Write and annotated bibliography of the Jamieson article (see Resources Tab)

Due: Sunday night before the next class by 11:59 PM (Due June, 17 11:59 PM).

Assigned reading list for ASEC 685 Science Communication (Source: Dr. Linda Pfeiffer)

Online Discussion boards: Some faculty facilitate online discussion boards, where students are asked to post the key points, they analyzed from readings while responding to others discussion posts.

Creswell & Plano Clark. Chapter 8

The above chapter reading explained writing and evaluating mixed methods research. The listed general guidelines for writing include focusing on the structural aspects of writing a mixed methods study with reference to the audience or readers. The writers should define mixed methods research and include references to the mixed methods literature and other writing components associated with mixed method studies. The outlines for writing various studies like dissertation writing, a mixed method journal article, and a thesis proposal were elaborated on in the reading. The reading also explained several criteria that are specifically used for evaluating the quality of mixed methods studies.

Application: These reading insights will help me to understand and evaluate the validity of the research proposal project for this class and also helps me to evaluate and carry out warrantable research in future projects.

Questions: How can an early-stage researcher make relevant decisions at each stage of the research process?

Analysis and Critique: I find the Plowright reading informative, clear, and comprehensive. The importance of conducting warrantable research in addressing the research questions is stated clearly. The tables given in Creswell and Plano Clark briefly explained the outline of the structures in writing different types of mixed-method studies.

Discussion board activities in AEC 6932 Mixed Methods Research (Source: Dr. Sebastian Galindo and Sravani)

This activity enhances learning outcomes by promoting peer learning and critical thinking through an opportunity to learn and reflect at their own pace. Also, discussion boards allow teachers to use them as a platform to provide prompt feedback on students' performances.

Critical analysis of research articles: Analyzing research articles is one of the assignments that improved our critical thinking. For instance, in the Methodology of Planned Change class at the University of Florida, the faculty assigned specific articles to the students for analysis. The critical analysis involves the following components:

- Key takeaways from the study
- A paragraph explaining connections to assigned class readings (assignments and discussions)
- Detailed critique based upon the student's knowledge of the theory and the underlying research (does the article support or contest what they know)
- A plan for implementing the theory in research and practicing the learnings from the study as a professional
- Critique of research design, methods, and analysis techniques

Developing theory matrix

The AEC Department at the University of Florida mandates doctoral students to take courses on theories of agricultural education, communication, extension education, and leadership. These courses cover seminal and fundamental concepts applied in these areas. One common assignment across all such courses is the development of a theory matrix. The theory matrix includes components such as the name of the theory, its fundamental components, limitations, research, and professional application, and sometimes includes a research manuscript that uses the specific theory as a theoretical framework.

Theory Name	Key Authors (Complete Citations)	Fundamental Concepts	Research Applications	Professional Applications
Constructivism	Doolittle, P. E., & Casp, W. G. (1999). Constructivism: The career and technical education perspective. <i>Journal of Vocational and Technical Education</i> , 16(1) https://scholar.lib.ve.edu/ejournals/VITE/v16n1/doolittle.html	Constructivism is a theory of learning that has roots in both philosophy and psychology. The fundamental core of constructivism is that learners actively construct their own knowledge and meaning from their experiences. Constructivism acknowledges the learner's active role in the personal creation of knowledge, the importance of experience (both individual and social) in this knowledge-creation process, and the realization that the knowledge created will vary in its degree of validity as an accurate representation of reality. 1. Knowledge is not passively accumulated, but, rather, is the result of active cognizing by the individual; 2. Cognition is an adaptive process that functions to make an individual's behavior more viable given a particular environment; 3. Cognition organizes and makes sense of one's experience, and is not a process to render an accurate representation of reality; and 4. Knowing has roots both in biological/neurological construction, and in social, cultural, and language-based interaction. Cognitive Constructivism, Social Constructivism, and Radical Constructivism are three types of Constructivism. Cognitive Constructivism is associated with information processing and its reliance on the component process of cognition. It emphasizes only that knowledge acquisition is an adaptive process and results from active cognizing by the individual learner (Eg. Students learn to problem-solve construction of mental structures that mimic and function effectively within a knowable reality). Radical Constructivism emphasizes three tenets: i.e., knowledge acquisition is an adaptive process that results from active cognizing by the individual learner, rendering an experientially based mind, not a mind that reflects some external reality. It is also concerned with the construction of mental structures, the position of cognitive constructivists and the construction of personal meaning (Eg. Student's personal understanding and his or her mental model of the problem-solving process). Social Constructivism emphasizes the four epistemological tenets (Eg. Teacher-student interactions, cooperative learning groups, or classroom discussions). Social Constructivism is more concerned with meaning than structure.	Assessing the knowledge of secondary school kids through participation in an agricultural field trip using the lens of constructivism. Assessing the skills of young farmers participated in an IoT-based Workshop. A constructivist approach	The theory of constructivism plays a critical role in extension education as the program target specific outcomes and design their strategies based on the needs of their target audience. As an educator, I apply this theory to understand the abilities, knowledge and skills of my target audience so as to tailor any educational training programs to meet hands-on group discussions and practical so that learners can actively construct their knowledge, which makes sense in the real-world application.

Theory matrix from Teaching & Learning theory class (Source: Sravani)

"In all my theory classes, I have developed a theory matrix, and it is a one-place reference to prepare for the Doctoral candidacy exam (preliminary/qualifying exam) and future reference as I pursue work in the industry/academia/field level Extension."

Sravani

Group discussions

In most of the classes (for instance, Agricultural and Natural Resources Communications Theory and Strategies), we had opportunities to discuss case studies and instant prompts related to the research and professional application of the theories taught in class. Sometimes, the instructor allocates different modules to groups of students and asks them to prepare discussion questions based on the key concepts of the week and lead the class discussion. This provided an opportunity to share our ideas and knowledge with peers in the class. We were encouraged to share our thoughts on whiteboards. This

facilitated a cross-cultural information exchange (different country students' viewpoints) and enhanced the learning outcomes.

Announcements ▾

Discussion Leaders Schedule

Posted Jun 19, 2024 4:52 PM

Schedule for Leading Discussion/ Development of Video (due the Saturday before class by midnight)

Module 3: Scientist-Media Interface: Anna & Erin

Module 4: Audience Variables. Isabelle & Nicole

Module 5: Framing & Inoculation: JP & Jessica

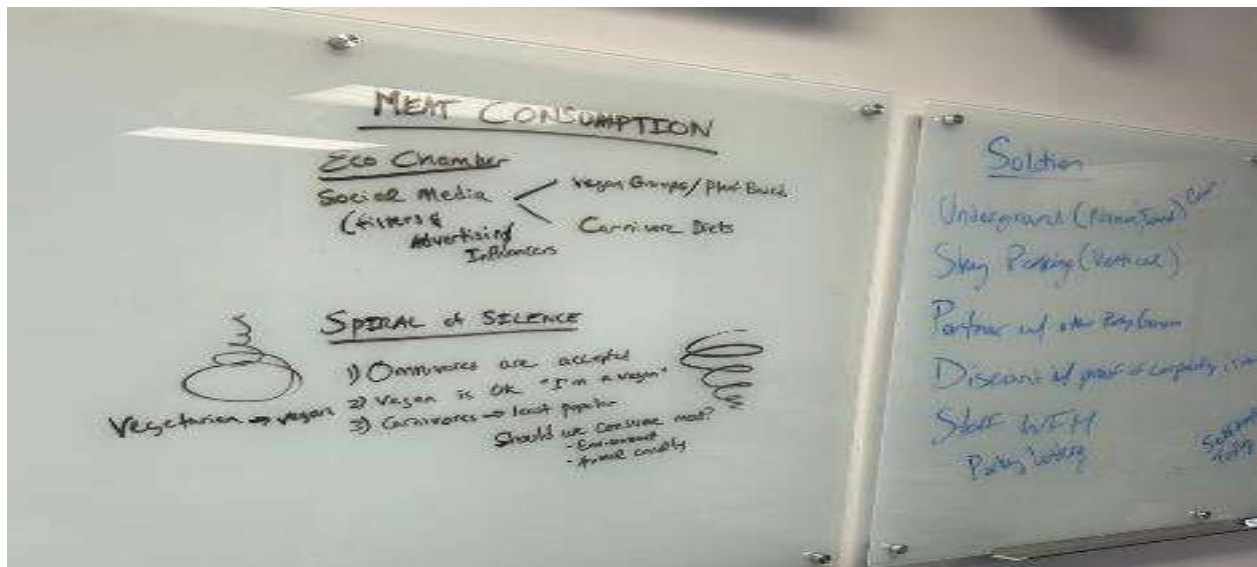
Module 6: Communicating Uncertainty and Risk: Hema & Abby

Module 7: Politicization of Science: Sierra & Izzy

Discussion Questions

1. What is an example of framing you have experienced?
2. Out of the examples of framing (Nisbet, Table 2), which could you use in your field of study and how?
3. How can you use inoculation theory in your field of study?
4. How might the effectiveness of different framing strategies vary across different audience segments or cultural contexts?
5. How could climate scientists use framing and inoculation strategies when presenting their findings at a public forum where climate deniers are expected to attend?

A glimpse of the discussion schedule from the Science communication course posted on Purdue Brightspace and the discussion questions from Module 5 presented by the students. Source: Instructor & students Science Communication course



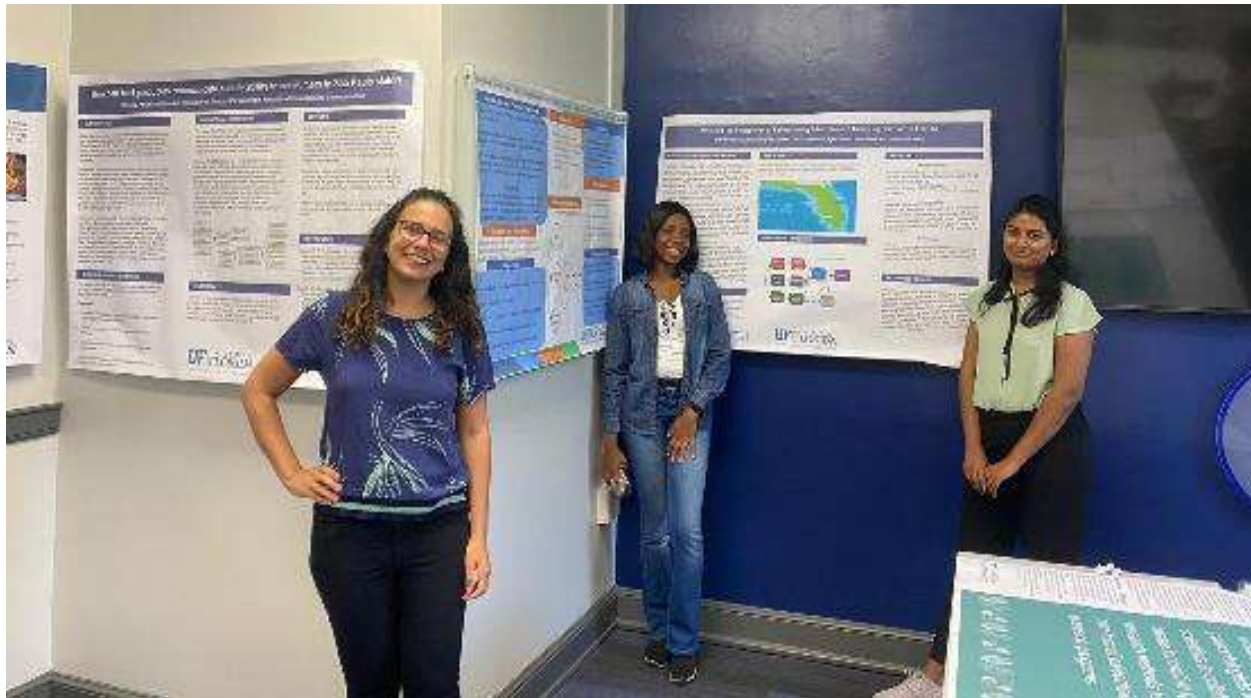
Students' reflection exercise on a whiteboard from the Agricultural and Natural Resources Communications Theory and Strategies class. Source: Sravani

“For instance, in Qualitative Methods and Science Communication courses, a group of students would present the readings of the week and pose thought-provoking questions to the remaining students, encouraging them to share their experiences. As we are students from different countries, we get to hear a variety of opinions. The professor would step into the discussion when it was necessary. This activity enhances students' communication and presentation abilities.”

Hema

Class projects and presentations

In most of the courses (for instance, Research Strategies), we had opportunities to present a final project with a presentation/poster, and this activity helped us boost our self-confidence in delivering presentations. The presentations also included an activity for peer engagement. The skills gained through repeated presentations in different classes helped us deliver research presentations more confidently at conferences and collaboration meetings. The final presentations here require students to implement all the concepts they have learned in the classroom and create a real or hypothetical project. Moreover, instructors provide constructive feedback, which further aids in strengthening students' work.



Poster presentation from the Research Strategies class. Source: Sravani

Guest lectures

Experts from the field and alums working in specific industry positions provide us with insights into the potential opportunities after graduation and share their current projects through guest lectures. For instance, in AEC 6316: From America to Zimbabwe: An Overview of International Extension Systems, individuals working in different extension systems (government, non-profit and cooperative extension systems) described their work and extension experiences.

Independent study

We could also enroll in an independent study course, provided we have an interest area, and a professor interested in teaching the course. The professor would assess and grade the course on a Satisfactory/Unsatisfactory basis at the end of the semester based on the students' performance. This also includes regular one-on-one meetings with the professor to answer questions and provide direction. These differ from elective courses in the Indian education system in that the student, under the supervision of a professor, can design a new course and define the learning objectives and activities depending on the individual's interests and goals. In contrast, elective courses in India require students to choose among the options provided. This will facilitate students' acquiring in-depth knowledge of their chosen subject matter through personal instruction. For the Summer 2024 semester, we (Sravani & Arati) are enrolled in the Summer Extension Experience, an independent study led by Dr. Laura Warner and Dr. Matt Benge.

This course enhances our understanding and exposure to the Florida Cooperative Extension System through field visits and assigned readings.



Field visit to Orange County Extension office and participation in in-service training. Source: Arati

EXTRA CURRICULAR ACTIVITIES

Scope for applying theory into practice (EDIS publications)

As we progressed through our (Sravani and Arati) coursework, we had opportunities to work on the extension publications (Electronic Data Information Source of UF/IFAS Extension) published by the University of Florida. These publications helped us understand the importance of translating research findings into a simple language for extension faculty and audiences to design and implement educational programs based on the research findings. Sravani led the Extension publication linked here (<https://journals.flvc.org/edis/article/view/134762>).

Conferences & Networking

As graduate students (both master's and PhD students), we got opportunities to attend various conferences to present our research. The conferences help us learn about the research happening in the field of extension and give us the opportunity to attend various professional development workshops. In addition, conferences are wonderful platforms to meet with researchers and network with faculty experts in the field. Here, our departments and the project that we work on support our travel for participating in conferences, which helps reduce the financial burden on students and enhance their motivation to attend various conferences. Furthermore, the research and innovative idea presentations presented at the conference enable us to enhance our knowledge of research designs, methods, and other. Some of the conferences in which we participated are:

Conferences attended during 2023 and 2024

<p> Sravani Pasula Southern Region American Association for Agricultural Education (SR AAE) 2024, Association for International Agricultural and Extension Education (AIAEE) 2024 </p>	<p> Arati Joshi AIAEE 2023, 2024, SR AAE 2024, International Society for Agricultural Safety and Health, 2024 </p>
<p> Hema Lingireddy NCAAAE 2023, American Evaluation Association 2023, AIAEE 2024 & CEA 2024 conferences </p>	



Poster and oral presentations in various conferences. Source: Sravani and Hema

Mentorship

The Graduate Student Association (AEC GSA & ASEC GSO), in our departments at the University of Florida and Purdue University, organizes a mentor-mentee program that matches a new graduate student with existing students. The pair of graduate students are supposed to meet frequently with the expectation that the seasoned student (mentor) will provide insights and share experiences with new students (mentee).



Informal ASEC GSO gathering. Sources: Hema

“During my first year, I (Mentee) got to match with a final-year graduate student (Mentor), and I used to reach out to her if I was not sure about any class-related activities. Mentors share their experiences, and she guided me through some of those activities (technical writing & using online tools for assistantship grading) making things easy in my first semester.”

Sravani

“My mentor and I happened to be in the same classes in my first semester. She and I scheduled once a semester meeting and also met as necessary to discuss classwork, other graduate school activities, and personal matters. I have learned a lot about graduate school etiquette and work-life balance from her. She and I are very good friends and still meet regularly.”

Arati

“Similar to the University of Florida, we (Purdue ASEC) also have this mentorship opportunity, where the student mentors will guide the newly admitted students for a year regarding coursework, departmental and university activities, work ethics, etc. My mentors also helped me in coping with the academic stress while I was adjusting to the new system. Additionally, my advisor, supervisor, and lab mates helped me a lot to make this transition easier.”

Hema

Observational Learning

We (Sravani & Arati) got opportunities to attend some of the in-service training programs (for the Extension faculty) delivered by the Program Development and Evaluation Center (PDEC) at the University of Florida, and these experiences (Observational learning) helped us gain valuable insights about the organizational structure of the Florida Cooperative Extension System and the importance of delivering In-Service training. These sessions underscored the crucial role of delivering targeted training to early-career Extension faculty. As part of the coursework (ASEC 565: Principles of Adult Education course), Hema visited county extension offices (like Mandal in India), state extension offices, and several non-governmental organizations in the region to gain insights from their experiences and activities regarding program planning, development, and evaluation.



Visit to Lafayette Adult Resource Academy (LARA), a non-profit organization, as part of the Adult Education class (ASEC 565). Source: Hema

Student involvement in the faculty recruitment process

The hiring process is very transparent in our universities. The seminars of selected candidates are open to the faculty and graduate students. Students also get a dedicated meeting slot to meet with the candidate and ask questions. This helps the students who are aspiring to go into academia to peek into the candidate recruitment process.

Assistantship Experiences

We had the opportunity to work as research and teaching assistants in different semesters. As a Teaching Assistant (TAs), we (Sravani & Arati) assisted a professor with an undergraduate class, where we were responsible for grading student assignments and meeting with them as necessary. This included providing guidance and support to students in refining their writing abilities and fostering expertise in professional and scholarly communication. By working as a Research Assistant (RA), we (Arati, Sravani, and Hema) worked on federally and state-funded projects for conducting research, communication, extension, education, and evaluation activities. Through this, we develop expertise in research methods such as survey design, data collection using quantitative and qualitative techniques, data analysis, and writing research manuscripts or articles. Working on different research projects also builds our skills in coordinating email communications with collaborators. The research assistantship allows us to develop strong research and extension foundations. They also help us understand the ethical aspects of conducting research. Adopting this system of graduate assistantships in South Asian universities would help to strengthen graduate students' skills and knowledge. Modifications in curriculum and teaching policies are prerequisites for this change.

Apart from all these discussed above, there are also other relevant experiences worth mentioning (Box 1).

Box 1: Some other experiences

- Opportunities to get experience in various leadership roles (in graduate student associations and executive committees in conferences) as the president, secretary-treasurer, and student representative within the department or college, as well as the ability to serve as the senate and career representative for a variety of organizations within the university. For the academic year 2023, Sravani and Arati served as Treasurer and General Secretary of the AEC Graduate Student Association. For the 2024–25 academic year, Hema is going to serve as Secretary-treasurer in the Purdue ASEC department, where I manage finances for informal departmental activities, apply for grants for student activities, and facilitate the monthly student-faculty seminars. Arati is also the graduate student representative for the Association for International Agricultural and Extension Education (AIAEE) for this academic year.
- Opportunity to take various courses across the campus according to one's own research interests. This gives students the opportunity to acquire knowledge relevant to their interests and the competencies required to excel in the profession.
- Availability of resources for mental health and wellness. This underscores the importance of the United States' education system in terms of its commitment to the comprehensive health and well-being of students.
- Shorter semesters (Fall (4 months), Spring (4 months), and Summer (3 months)) allow students to focus more intensively on fewer subjects, improving retention and comprehension.
- Healthy professional and personal relationships with instructors: Students often meet with their advisors through regular meetings, held weekly or biweekly, which provide opportunities to discuss academic progress and share any personal difficulties as international students that might be impacting education and work. These close relationships with instructors, advisors, and supervisors foster a supportive environment that guides students in their academic pursuits and overall well-being.

END NOTE

We believe that the experiences discussed above are some of the most effective methods for engaging students in higher education in extension. The adoption of student-centric approaches in teaching by academic institutions in South Asia would benefit students by helping them gather relevant skills and knowledge. Considering the limited access to digital tools for online learning in State Agricultural Universities (SAUs), faculty can modify some of the activities based on the available resources, such as making use of whiteboards in classrooms, assigning readings (journals, textbook chapters, etc.) as pre-class preparation, and facilitating group discussions.

Our US exposure has profoundly transformed our aspirations. Therefore, we urge faculty members teaching extension education in South Asia to embrace these diverse and innovative approaches, ensuring that they contribute to a more dynamic, effective, and globally competitive educational environment.

“I now see Extension Education as a global subject, and I am planning to seek a career in international agricultural development (international extension). The varied learning opportunities discussed in this blog gave me opportunities to think critically and to apply the knowledge practically; considering my experience, I strongly believe students in SAUs of India will really enjoy this type of learning experience and practical engagement in classroom activities.”

Sravani

“I believe that studying at AEC has changed my perception of my ability to work. The class assignments, assistantship responsibilities, and other extracurricular activities have enhanced my critical thinking, interpersonal communication, timeliness, and professionalism. Changing the traditional way of teaching and making it more hands-on and engaging would work wonders in the outcomes of student learning in Nepal.”

Arati

“The year-long experience as a PhD student at Purdue ASEC has fostered my enthusiasm for the subject. It improved my confidence, responsibility, and discipline. The various concentrations of agricultural extension education here have opened new career opportunities that are more appealing to me (Extension evaluation specialist). I really appreciate the way the academic system in the USA embraces the limitless potential of extension.”

Hema

Sravani Pasula can be reached at: sravanipasula@ufl.edu

Arati Joshi can be reached at: aratijoshi@ufl.edu

Hema Lingireddy can be reached at: hlingire@purdue.edu

**AESA Secretariat: Centre for Research on Innovation and Science Policy (CRISP)
Road No 10, Banjara Hills, Hyderabad 500034, India**

www.aesanetwork.org

Email: aesanetwork@gmail.com