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Self-Perceived Readiness of Haitian Agricultural University Students to enter the Workforce: A Call for Curriculum Reform

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Abstract

The country of Haiti has faced chronic food insecurity for decades. Increasing domestic food production has been identified as a key part of the solution, but this requires building human capacity, especially related to agricultural extension and research. Haiti's agricultural universities can be key players in this process. The purpose of this study was to explore the self-perceived readiness of Haitian agricultural university students to enter the workforce. Results revealed students had a wide variety of career aspirations and appreciated the breadth of the agronomy engineer degree. Students also expressed favorable opinions about their preparedness for the job market but felt pessimistic about finding a job. Students valued the importance of research and felt prepared to lead a research project. Finally, students thought all 17 Global Forum for Rural Advisory Services (GFRAS) New Extensionist competency areas were important. Recommendations for additional research and practice are provided.

Keywords: Haiti, agriculture, higher education, research, extension

Introduction

The country of Haiti has faced chronic food insecurity for decades (von Grebmer et al., 2016). Haiti's challenges are attributed to an assortment of complicated internal and external pressures (USAID, 2017). A variety of international development initiatives have sought to address this complex situation and increasing domestic food production has been identified as a key part of the solution (USAID, 2017). However, sustainably increasing domestic food production is not a simple task. Scientific breakthroughs alone are not sufficient to lead to change; building human capacity is equally important (FAO, 2002).

Education and extension services have been previously identified as key institutions to developing the human capacity needed to address food insecurity (FAO, 2002). Educational institutions are tasked with developing the workforce across the value chain, from workers with basic skills all the way to workers for scientific and professional positions (Asenso-Okyere, Davis, & Aredo, 2008). Extension services typically provide technical advisory services to growers and assist with the transfer of new technologies (GFRAS, 2012). Agricultural universities play a key role in the capacity building system because their graduates become researchers and extensionists (Asenso-Okyere et al., 2008). In other words, they have the potential to create solutions to Haiti's problems and then get those solutions in the hands of the people who need it most. However, the preparedness of graduates of Haiti's agricultural universities is not known.

Theoretical Framework

This study was conducted using a competency-based professional education framework (Mulder, 2014). Under such a framework, we assumed that educational programs should help students acquire a set of competencies which meet requirements for the jobs they seek. Using this approach allows for assessing an educational program or system (Mulder, 2014).

A competency framework specific to Haiti's agricultural universities does not exist. Based on the literature, we began with the assumption that graduates need competence in the *soft skills* (Bennett, Dunne, & Carré, 1999; Crawford, Lang, Fink, Dalton, & Fielitz, 2011; Harvey, 2000). Next, based on our interest in students' competence for research and extension, we used the steps in the scientific process (Ary, Jacobs, & Sorenson, 2010) and the Global Forum for Rural and Advisory Services (GFRAS) *New Extensionist* competency framework (GFRAS, 2016) to begin our inquiry. The GFRAS *New Extensionist* competencies were organized in the categories of (a) adaption to change, (b) adult learning, (c) agricultural entrepreneurship, (d) agricultural systems, (e) behavior change, (f) communication, (g) community organizing, (h) critical thinking, (i) gender issues in agriculture, (j) leadership; professional ethics, (k) program implementation, (l) program monitoring and evaluation, (m) program planning, and (n) youth issues in agriculture.

Previous research on this topic is very limited. (Pierre, Calixte, Moore, Bunch, & Roberts, 2018) previously looked at this from the perspective of the university professors. They found faculty thought the most important GFRAS competency areas were (a) adaption to change, (b) agricultural systems, (c) communication, (d) professional ethics, and (e) program monitoring and evaluation. Additionally, they thought it was somewhat important to have competence in (a) agricultural entrepreneurship, (b) behavior change, (c) community organizing, (d) critical thinking,

(e) leadership, (f) program implementation, and (g) program planning. They believed the least important competency areas were: (a) adult learning, (b) gender issues in agriculture, and (c) youth issues in agriculture. Beyond the *New Extensionist* competencies (GFRAS, 2016), faculty believed it was important for students to have: (a) research skills, (b) the ability to be self-directed, and (c) the ability to work in teams.

Other research focused on extension and higher education in the Caribbean. Harder, Ganpat, Moore, Strong, and Lindner (2013) focused on identifying professional development needs of extension officers in the Caribbean (Belize, Granada, and Saint Lucia). They found the greatest needs for professional development were in the areas of program planning and evaluation. They did, however, note some variation between countries in the Caribbean. Hurst et al. (2015) explored the formal agricultural education system in Trinidad. Of relevance to the current study, they found that the curriculum at the higher education level varied from very technical to very theoretical, based on the university. The researchers also noted there was very little interaction or collaboration between higher education institutions. Additionally, Hurst et al. found negative perceptions of agriculture was a barrier for people choosing to enter the agricultural workforce.

Outside the Caribbean, other researchers examined higher education in general. Bennett et al.'s (1999) work synthesized research from around the world. They used the term *generic skills* to describe a set of competencies needed by graduates regardless of their discipline and career path. They organized their competencies in four categories: (a) management of self, (b) management of others, (c) management of information, and (d) management of task. In Europe, Harvey (2000) described a situation where employers often seek to hire graduates from what would seem as unrelated disciplines. He went on to say the reason why is that employers most desire competence in communication, interpersonal, and teamwork in graduates. A similar situation exists in the United States for agricultural universities. Crawford et al. used the term *soft skills* (2011) and their research organized these skills in seven clusters: (a) communication, (b) decision making/problem solving, (c) self-management, (d) teamwork, (e) professionalism, (f) experiences, and (g) leadership.

Purpose

This study was part of a larger study funded by USAID focused on examining the ability of Haitian agricultural universities to supply work-ready graduates. Previous research examined this from the perspective of university faculty (Pierre, Calixte, Moore, Bunch, & Roberts, 2018). Concurrent research considered the perspectives of employers. This study focused on identifying the perceptions of Haitian agricultural university students. Four research questions guided the inquiry:

1. What are students' career aspirations?
2. How prepared do students generally feel to enter the workforce?
3. How do students perceive their abilities to apply research skills?
4. How do students perceive their abilities in the GFRAS competency areas?

Methodology

This study was conducted under a theoretical lens of social constructionism (Schwandt, 2000). This was deemed appropriate because student perceptions were socially constructed as they progressed through their respective programs. Accordingly, focus groups were determined to be the best approach to answer our research questions. All research activities

were approved by the University of Florida IRB.

Participants

The target population was students who graduated within the last two years or were about to graduate from the six main agricultural universities. The universities were: (a) Université d'Etat d'Haiti - Faculté d'Agronomie et de Médecine Vétérinaire (FAMV), (b) American University of the Caribbean (AUC), (c) Université Caraïbe (UC), (d) Université Notre Dame d'Haïti (UNDH), (e) Université Quisqueya (UNIQ), and (f) Université Episcopale d'Haïti (UNEPH). Deans at each university were asked to identify students. To minimize any impact from gender, we conducted separate focus groups with male and female students from each university. A total 12 focus groups were conducted, with a total of 97 students participating. Students were all in agronomy engineer programs. Focus group sizes ranged from 8 to 13 for males and from 4 to 7 for females. In total, 63 males and 34 females participated in the study. Based on the order in which the focus groups were conducted, each university was assigned a number (U1, U2, etc.) and male focus groups were denoted with a M and female with a F. Data are reported based on the focus group in which a theme was observed.

Data Collection

Focus groups were conducted in French and participants were allowed to respond in French or Creole by a Haitian-American member of the research team. Focus groups were conducted on each campus at times which were convenient for students. Focus groups were audio-recorded and a Haitian research assistant was also present to take notes. The focus group guide was developed based on our theoretical framework and included 18 questions with follow-up probes. A list of the GFRAS competency areas was either written on the board or provided to students on papers for reference. Focus groups lasted between 90 and 120 minutes.

Data Analysis

Following each focus group, the research assistant summarized the audio recording and field notes to create a summary file for each focus group (Merriam, 1998). These summary files also included details about each focus group, thus establishing an audit trail (Lincoln & Guba, 1985). The second Haitian researcher compared the summary file for each focus groups with the recordings and field notes to establish trustworthiness in the data (Lincoln & Guba, 1985). The second researcher then conducted thematic analysis (Boyatzis, 1998) of each summary file. Initial coding included emergent codes to address research questions 1 and 2 and a blend of emergent and *a priori* codes from our theoretical framework (Ary et al., 2010; GFRAS, 2016) to address research questions 3 and 4. This process yielded 12 summary files with initial codes. Next, the second Haitian researcher conducted an additional analysis of the 12 summary files to organize the initial codes into an overall set of themes and sub-themes (Boyatzis, 1998). This was conducted in French and then translated to English. Peer debriefings were conducted with an American researcher throughout the process to ensure the quality of the analysis (Lincoln & Guba, 1985). The final analysis/results were shared back with the original researcher who conducted the focus groups as an additional layer of peer debriefing (Lincoln & Guba, 1985).

Subjectivity Statement

This research was conducted as a part of a USAID project focused on enhancing the Haitian capacity for

agricultural research and extension. The research team has four members, two of which are employed by the project and two are Co-PIs on the project. The first Haitian-American researcher is a female who studied in the U.S. Her professional expertise is in monitoring and evaluation methods. The second Haitian researcher is a male who holds a PhD in agricultural higher education and previously worked at one of the universities in this study. The third researcher is an American male who is a professor of agricultural education who has worked throughout the Caribbean. The fourth researcher is also an American male and is an assistant professor of agricultural education who has also worked in the Caribbean and Latin America. Collectively, this group of researchers believes in the power of education and the importance of higher education as a tool for addressing food insecurity. Only the second Haitian researcher had a prior relationship with any of the universities.

Results

Career Aspirations

Students had a wide variety of career aspirations. In five of the focus groups, students mentioned starting a farm (U1-F; U2-M; U3-F; U5-F; U6-M), helping farmers (U1-M; U1-F; U4-M; U4-F; U6-F), increasing national level food production (U2-F; U3-M; U4-F; U6-M; U6-F), and improving the environment (U2-F; U3-M; U4-M; U6-M; U6-F) were their most sought after career aspirations (see Table 1). In addition, four focus groups had students who expressed the desire to work in a field in which they could improve local communities (U4-M; U5-M; U6-M; U5-F). The thought of gaining any type of employment was mentioned in three of the focus groups. A career in research or extension was mentioned by three of the focus groups, while two focus groups mentioned having aspirations to becoming an educator or trainer. Interestingly, continuing education was mentioned in three of the male focus groups, but not in the female focus groups (U1-M; U2-M; U4-M). Finally, becoming an entrepreneur was brought up in two focus groups (U2-F; U4-M; see Table 1).

Table 1
Career Aspirations of Graduates

Career Goal	Number of Focus Groups	
Start a farm	5	U1-F; U2-M; U3-F; U5-F; U6-M
To help farmers	5	U1-M; U1-F; U4-M; U4-F; U6-F
Increase agricultural production	5	U2-F; U3-M; U4-F; U6-M; U6-F
Improve environmental practices	5	U2-F; U3-M; U4-M; U6-M; U6-F
Improve communities	4	U4-M; U5-M; U6-M; U5-F
Continue education	3	U1-M; U2-M; U4-M
Gain employment	3	U1-M; U2-M; U5-F
Research or Extension	3	U1-M; U3-M; U6-M
Education and Training	2	U2-F; U4-M
Become an entrepreneur	2	U2-F; U4-M

Note: N = 12 focus groups

Preparation for Employment

Preparedness

Students expressed favorable opinions about their preparedness for the job market. One group of students appreciated the breadth of their program, learning not only about agriculture, but other subjects (U4-F). Students also shared how their program helped them understand the variety of skills needed for career success (U6-M). Students indicated they were prepared to think, analyze, and question like engineer agronomists (U6-F). Another group of students were very positive about their preparation, indicating they had learned more than needed to work in the field (U1-M).

Theory and reality. Students expressed mixed opinions about the connection between theories they learned in class and the reality in the field. Students in one group said some of their courses are very practical, while others are too theoretical (U1-F). They went on to suggest there is no oversight of what is taught, and the deans do not know what is happening in each class (U1-F). Students in crop sciences at one university explained they were taught about large scale cropping systems based on practices in France, but this did not match the reality in Haiti (U3-M). One student estimated what he had learned only matched about 50% of the reality in the field (U2-M). One student shared there was not necessarily a mismatch between his coursework and the reality in the field, rather "we have only a brief view in the courses while the field asks a lot" (U3-M). Another group of students appreciated the breadth of courses they took but acknowledged many of the courses did not match the reality (U4-F).

Other groups of students were very complimentary about what they had learned. One group of students (U1-M) felt their courses were excellent and aligned with the realities in the field. Students in another focus group believed that the natural resource program at their university closely matched the realities in the field (U3-M). Students at another university shared how their time living at the teaching farm helped them understand the realities in the field. One student said,

> at the end, we know better the importance and the techniques of production, particularly during our two years living on our academic farm. We are much more prepared to work with NGOs and face with the problems of this sector. (U2-F)

Yet another group of students (U5-M) thought their classes adequately prepared them for the realities sector.

Practical experience. Students expressed a desire to have more practical experiences in their degrees. A student in one of the focus groups thought it would be great to have some practical experience connected with each class (U3-F). Students in another focus group specifically wanted more experience working directly with farmers (U5-F). They said that a lecture cannot replace direct interaction with people. Students in one focus group shared the quality of the practical experiences is also important. The importance of internships and other field experiences was expressed by one group of students (U6-F), but they went on to express frustration because many classes that could have these experiences do not (U6-F). Even if they do have these kinds of experiences. one student said, "we learned nothing because they are not well organized" (U6-F).

Pride. Students were proud of what they learned from their universities. Students from one university said "Our college of agriculture gives us a standard formation, training, more or less international. When we go to the USA and France, we are comfortable" (U4-M). Another student said "the sciences are the same in every part of

the world. The job market is really competitive. Therefore, we have to be always on the ball. The field or the market is the court that will judge us" (U1-M).

Personal responsibility. Students in three of the focus groups acknowledged a personal responsibility in ensuring they had the necessary skills for their future careers. One student shared that she must do some personal research to understand the background of an issue because the realities in the field do not always match the theories learned in class (U1-F). A student in a different focus group also emphasized the importance of personal research to fill in gaps not learned in class (U3-F). Yet another student explained that the courses may not match the realities in the field, but that gap could be closed by personally initiating activities and research (U4-F). One student asserted "We have to make our own research to have some practice" (U6-F). A student at a different university explained that she liked the opportunities to go out in the field because it allowed her to take responsibility for her own learning (U5-F). One student summed it up by saying "by the mercy of the Internet, we can complete what we miss" (U6-F). Another group of students said their university is good about providing the basic concepts, but they must volunteer to gain practical experience using the concept (U1-M).

Job opportunities. Students are not optimistic about finding employment after graduation. One group of students estimated that only about 12% find a job after graduation (U1-M).

Research Skills

Importance of research. Students valued the importance of research. Students in Focus group U4-F expressed that research has a positive impact because it helps to improve something and solve problems. Another group of students (U2-F) considered research as an important skill to address problems. In contrast, a student in Focus Group U4-M said that some people do not even believe in the importance of research in Haiti.

Leading a research project. Students felt prepared to lead a research project. Students in Focus Group U3-M thought they are ready to implement or apply research in their future work. Focus Group U4-F also believed they can lead a research project. The male students at the same institution (U4-M) thought the same in terms of research and extension for development. Students from U2-M said that they can do some research, but still need support or coaching.

Learning research skills. A variety of courses and experiences helped students learn research skills. Students in U3-M believed that their final research project (memoire) was an important tool for developing their research skills. Students in that same focus group who were currently conducting their memoire research agreed. Focus group U4-M also agreed but felt because a final project (a memoire) was not required at their university that they were not as prepared to do research. They further expressed concern that they did not have tools and materials necessary to implement a research project. Students in U1-M referenced specific courses in research methodologies and biometry gave them the skills to conduct qualitative and quantitative research. Students in U2-M discussed a research methods course that helped them to do research and to interpret data.

Specific research skills. Students highlighted a handful of their specific research skills. Students in Focus Group U3-M felt comfortable judging the quality of research conducted by others. They also felt comfortable using the Internet to search for quality research information. Depending on their specialization, they felt comfortable in

quantitative methods, qualitative methods, or both. Focus Group U4-F indicated they feel competent in both quantitative and qualitative methods. Focus Group U1-M felt they can design a study, collect data, analyze data, and interpret results.

Extension Competencies

Overall importance. Students thought it was important for them to have some level of competence in all the GFRAS competency areas. The majority of U4-F thought all 17 GFRAS competency areas are very important, particularly critical thinking and gender in agriculture. Although a few students did not think critical thinking and adult learning were quite as important. Students from U2-F felt all the competences were very important, although they expressed slightly less importance for adaptation to change and critical thinking. Students from U1-M specifically noted competence in leadership, ethics, and adaptation to change are critical for their career. However, students in U2-M did not think adaptation to change, adult learning, behavior change, critical thinking, and project implementation were as important as the other competencies.

Planning, implementing, and evaluating programs. Students felt varying levels of competence in planning, implementing, and evaluating extension programs. Students in U3-M felt prepared to implement programs, specifically referencing environmental education programs. Similarly, students in U2-F thought that they are ready to implement, develop, and evaluate program. Students in U4-M and U2-M expressed partial comfort in planning, delivering, and evaluating programs. U4-M felt most comfortable in identifying and developing the objectives for programs. Whereas students in U2-M felt most competent in delivering and evaluating programs. Students in U4-F expressed a desire to plan, deliver, and evaluate education programs, but felt they would need some assistance to do so.

Students shared some specific courses and experiences they thought helped them develop program planning, delivery, and evaluation competence. Students in U2-F discussed courses in project management, agrarian systems, extension, and rural sociology. They shared these classes helped them learn to identify a problem, working with different people to deliver a program, and being a program leader. Their male peers (U2-M) agreed that some courses like project management, extension, aquaculture, marine resources, and methods courses gave them skills in program planning, delivery, and evaluation.

Leadership and leading change. Students felt prepared to lead change with various groups of people. U4-M felt prepared to be a leader of change and are ready to implement and manage change. They went on to share they felt equally comfortable working with people across social strata, age, and gender. Students from U3-M thought they are all leaders ready to work with all kinds of people. Students in U4-F shared they currently work under supervision from someone else, but they are prepared to be leaders and make decisions because of what they learned at U4. Students in U2-M felt very prepared to lead change and capable of influencing all kinds of people (youth, women, adults). As an example, one student shared “there are some people who used to send their garbage in the streets, but with some methods that make them aware of the problem and a good communication, he finished by having their behavior changed.”

Conclusions, Recommendations & Implications

Career Aspirations

Students had a wide variety of career aspirations and appreciated the breadth of the agronomy engineer degree. The most common career goals were (a) starting a farm, (b) helping farmers, (c) increasing national level food production, and (d) improving the environment. Working in extension, research, education, or training were not frequently mentioned. It is also interesting to note that only male students aspired to continue their education.

These conclusions are similar to previous research. (Pierre, Calixte, Moore, Bunch, & Roberts, 2018) showed Haitian professors were not optimistic about students' potential to find a job related to their degree. The diversity in career aspirations expressed by students reveals students may be thinking broadly about how they might apply what they learned in their degree. Most focus groups had students who wanted to work in agriculture and many expressed an altruistic desire to improve the conditions in their country. A similar desire to make a difference was noted in workers in various extension and advisory services in Haiti (Albert, Roberts, & Harder, 2017).

We recommend that the Haitian universities follow up with graduates to gain a better understanding of the types of positions graduates are taking. This information could be used to adjust the curricula and experiences at each university. Additional research should explore why only male students expressed a desire to continue their education. Research should also explore why so few students mentioned careers in extension, research, education, or training. Many of the career aspirations mentioned (e.g. helping farmers, improving food production, improving communities) imply activities related to extension, research, education, and training. Do students not understand these career options?

Work Preparedness

Students generally expressed favorable opinions about their preparedness for the job market. However, students expressed mixed opinions about the connection between the theoretical learning at their universities with the practical reality in the field. Students expressed a greater desire for more practical experiences as a part of their degree. Despite these short-comings, students expressed pride in their respective universities and acknowledged a level of personal responsibility in making sure they were prepared for the job market. Unfortunately, students were very pessimistic about finding a job directly related to their degree.

These conclusions are largely consistent with previous research. Many focus groups of students noted the disconnect between theoretical instruction and field realities. This aligns with Hurst et al.'s (2015) finding of differing levels of practical instruction at universities. In the same vein, students also expressed a desire to have more practical experiences included in their degree. This fits with what Crawford et al. (2011) found in the United States. Pride in their institutions is congruent with what Albert et al. (2017) found with extension workers. Taking personal responsibility was previously noted by Bennett et al. (1999) and Crawford et al. Additionally, professors also thought it was important for students to be self-directed (Pierre, Calixte, Moore, Bunch, & Roberts, 2018). Finally, the pessimistic job outlook by students was shared with their professors (Pierre, Calixte, Moore, Bunch, & Roberts, 2018).

We recommend Haitian universities explore the potential to integrate more practical and field experiences in their curricula. Institutional pride and personal responsibility seem to have great potential as motivators for students. Further research is recommended to explore how these (and other) motivators might influence academic success and career development. The pessimistic job outlook noted by students (and professors in the previous study) is problematic. Considerable resources (human and financial) are invested in higher education. Further research should examine the underlying conditions that contribute to this situation. This may yield curricula and policy changes at the universities. Additional research should also examine alumni of the universities to explore where they are working, the types of jobs they hold, and the extent to which they believe the universities gave them the competencies needed for success.

Research Competencies

Students valued the importance of research. They also felt capable of leading a research project. Most students valued the importance of their memoire (thesis) in helping develop their research skills. Although some students noted a lack of resources at their university to learn how to do research. The specific research skills possessed by students varied. Students generally felt comfortable using the Internet to find research and being able to judge the quality of previous research. Depending on the university and specific program within the university, students believed themselves to be competent in quantitative and qualitative research methods.

These conclusions are consistent with previous research. Professors also valued the importance of students learning research skills (Pierre, Calixte, Moore, Bunch, & Roberts, 2018). van Crowder, Lindley, Bruening, and Doron (1998) also emphasized the importance of developing skilled agricultural researchers in developing countries.

Perceived competence and actual ability do not necessarily align. Further research could use content analysis of the memoires to determine the specific methodologies used and the level of rigor applied. Additionally, as noted by (Pierre et al., 2018), most Haitian faculty are educated at the M.S. level. The research capability of the professors is also unknown. Additional research could explore this issue. Further research could also follow up with graduates working in the field to see what research skills are needed most. This could allow for universities to adjust curricula.

Extension Competencies

Students thought all 17 GFRAS competency areas were important, although adult learning, behavior change, and critical thinking were viewed as slightly less important in some of the focus groups. In addition to perceived importance, we sought to determine their perceived competence. Students felt varying levels of competence in planning, implementing, and evaluating extension programs. In contrasts, students generally felt prepared to lead change with various groups of people, which encompasses communication, leadership, adaptation to change, behavior change, adult learning, gender, and youth.

This partially contradicts what their professors said (Pierre, Calixte, Moore, Bunch, & Roberts, 2018). Professors thought (a) adult learning, (b) gender issues in agriculture, and (c) youth issues in agriculture were not that important for students to master. Otherwise results were similar. The GFRAS competency areas overlap the *soft skills* discussed earlier. As such, the importance of communication, leadership, ethics, critical thinking, and

leadership is consistent with other work around the world (Bennett et al., 1999; Crawford et al., 2011; Harvey, 2000).

It is important to note that our use of the GFRAS competency framework provided a general glimpse at what students perceived. A more detailed understanding could be accomplished by using a more in-depth assessment of extension competencies like the 38 specific skills assessed by Harder et al. (2013). Additional research could also explore the differences between faculty and students on adult learning, gender, and youth. Universities can look for opportunities to integrate some of the extension competencies in their curricula, especially the ones that align with other soft skills.

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