Senior FFA Members' Openness, Preparedness and Adaptability Regarding New and Emerging Technologies

In late 2020, Purdue University collaborated with the National FFA Organization on a research study to discover the impact of agricultural education on senior FFA members' openness, preparedness and adaptability regarding new and emerging technologies in Agriculture, Food and Natural Resources (AFNR). Openness, preparedness and adaptability are all skills that are in high demand from universities and employers; in fact, they were chosen for this study based on National FFA staff interactions with employers in agricultural companies and technology discussions that took place at the FFA Blue Room. In total, 1,528 member responses were used in data analysis.

Seniors Open to New and Emerging Technologies, May Require More Experience and Education to Use Them in a Classroom, Lab or Future Career

Developing technology has always played an important role in agriculture. In 2021, the necessity of being adaptable to new technologies is critical for those entering the field of agriculture. This research study defined "adaptable" as being open and prepared. These qualities were measured using the Openness and Preparedness Scale.* On the survey, 10 new and emerging AFNR technologies were described, and respondents were asked to indicate both their openness toward the technology's use within AFNR and their preparedness to use the technology in a classroom, lab or future career on a 1 to 5 scale. The average scores for each technology (see Figure 1) show that FFA seniors reported high openness. However, members reported average preparedness for using these technologies—for five out of the 10 technologies, respondents' preparedness scores approached a 1 on a 1 to 5 scale, or "very low."

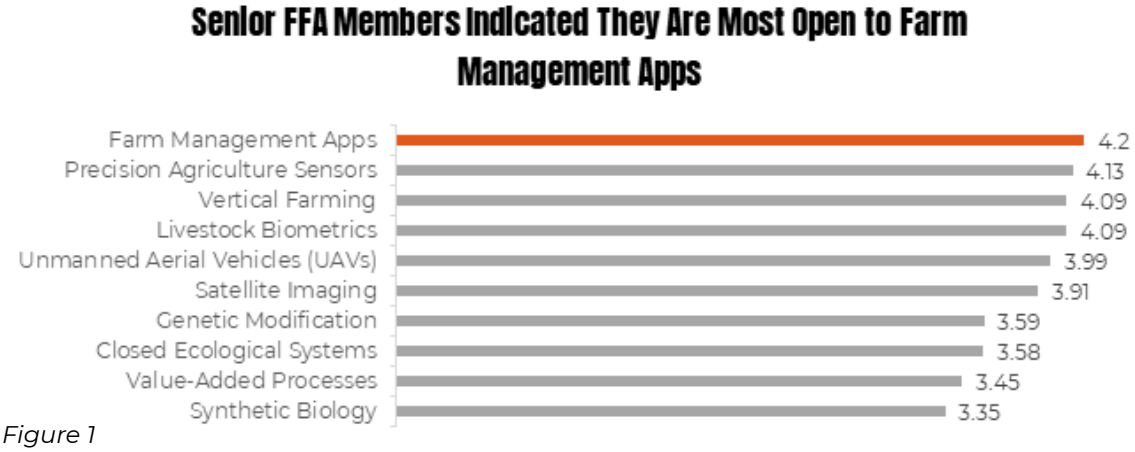

Figure 1
1=very low, 5=very high

*King, L.G., McKim, A.J., Raven, M.R., & Pauley, C.M. (2019). New and emerging technologies: Teacher needs, adoption, methods, and student engagement. Journal of Agricultural Education, 60(3), 277–290. https://doi.org/10.5032/jae.2019.03277

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A Positive Correlation Exists Between Members' FFA Involvement, Openness, Adaptability

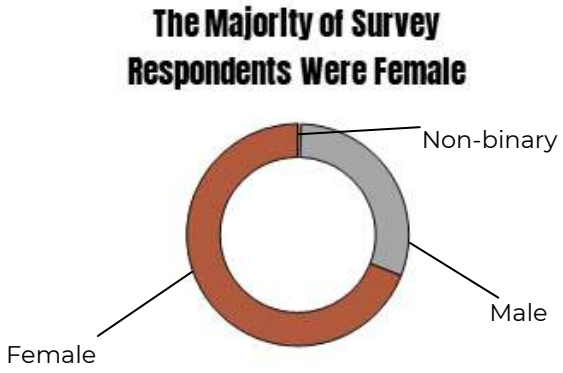
The study also found a positive correlation between respondents' involvement* in FFA and their openness and adaptability to five of the 10 technologies listed in Figure 1 in a classroom or laboratory or in their future careers. Their FFA involvement was self-reported by members using an FFA Involvement Scale, which asked members if they had participated in various FFA activities at the chapter level up to the national level. The more FFA involvement members reported, the higher members scored on the Openness and Preparedness Scale and Career Adaptabilities-Scale (CAAS)* for those five technologies to which they are both open to and prepared to use. The CAAS measures members' adaptability through subscales of concern, control, curiosity and confidence.

National Representation

At least two members from every state responded to the survey, with the exception of Hawaii, Rhode Island and Vermont. Three respondents were from Puerto Rico. The states colored in orange on the map below are those that had representation from 50 or more respondents.

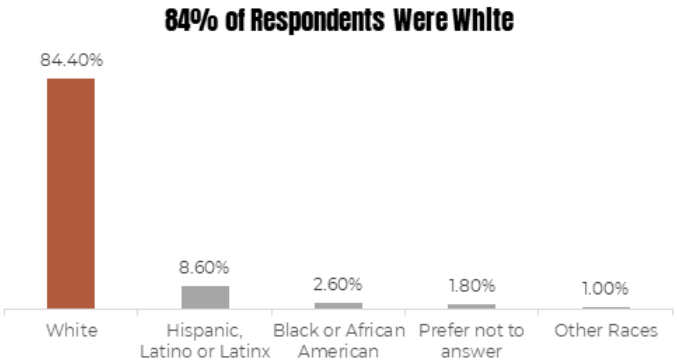
Gender Identity

The majority of respondents indicated they were female (69%) while 30.5% of respondents indicated they were male, and 0.4% of respondents indicated they were non-binary. Just 0.1% of respondents chose not to disclose their gender.



Race and Ethnicity

A large majority of survey respondents were white (84%) while 8.6% were Hispanic, Latino or Latinx and 2.6% were Black or African American.



Free and Reduced Lunch Status

Fifty-six percent of respondents replied that they did not receive free or reduced lunch in the current school year while 39% of respondents replied that they had. Five percent preferred not to answer.

39%

of respondents received free or reduced lunch in the current school year

*Copeland, B. (2019). Exploring the employability skills and academic success of the National FFA membership [Unpublished master's thesis]. Purdue University.
*Savickas, M.L., & Porfeli, E.J. (2012). The career adapt-abilities scale: Construction, reliability, and measurement equivalence across 13 countries. Journal of Vocational Behavior, 75(3), 239–250. https://doi.org/10.1016/j.jvb.2009.04.004