



# URBAN AGRICULTURAL EVENT AND THE DIFFUSION OF INNOVATION THEORY WITH AGRICULTURAL EDUCATION

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## ABSTRACT

Agricultural education takes into account basic agricultural methods, vocabulary and terms, and the ability to understand the impact of agriculture on society. An Urban Agriculture Day (UAD) program, conducted by Virginia Cooperative Extension (VCE), was directed towards the 5th grade students of the Lynchburg City Schools (LCS). In addition to the 5th grade youth participating, this program also demonstrated to the LCS 5th grade teachers hands-on learning about agriculture of Virginia and other subjects which fulfilled several requirements of the Virginia Standards of Learning (SOL) testing. Using Rogers' (2003) Diffusion of Innovation theory as a framework, this project investigated how teachers perceive the relative advantage, compatibility, complexity, trialability, and observability of Urban Ag Day for the teaching of SOLs.

Through the Diffusion of Innovation, the UAD demonstrated new techniques to the teachers using agriculture as its theme. The UAD was heavily supported after the event and many of the teachers are willing to take what they learned from the UAD into their classrooms. The UAD allowed the teachers to 'test' the innovation by which it incorporated SOL lessons using agriculture as its basis.

Ultimately, the students and teachers learned about Virginia agriculture through lessons designed and catered to Virginia's Standards of Learning. Therefore, this program depicts what an urban youth learns about Virginia agriculture and begins to shape their opinion on it in the future. The teachers which participated in this program have become empowered to change their approach in the classroom in order to make a positive change.

## INTRODUCTION

Pertaining to a study between rural and urban students perceptions of agriculture, the urban students knew much less than the rural students regarding agriculture and that "persons who reside in larger cities and metropolitan areas would expectedly have fewer opportunities to interact with farmers and individuals employed in agricultural businesses. Therefore, educational programs should be provided in larger population centers to meet the educational needs of those residents regarding agriculture, food, and natural resources" (Frick, Birkenholz, Gardener, & Machtmes, 1995; p. 8).

Students taught by incorporating agriculture and scientific principles demonstrated a more successful achievement than did students taught by traditional approaches (Chiasson & Burnett, 2001).

An Urban Agriculture Day (UAD) program, conducted by Virginia Cooperative Extension (VCE), was directed towards the 5th grade students of the Lynchburg City Schools (LCS) to demonstrate hands-on learning of agricultural education to the 5<sup>th</sup> grade teachers. The UAD served as the innovative approach to teaching the SOLs utilizing hands-on agricultural education as its main element.



## METHODS AND MATERIALS

Youth were crawling through a soil tunnel and creating erosion and runoff, coming in contact with animals that produce many common foods and tools: dairy cow – milk, cheese; pig – bacon, pork; sheep – lanolin, wool, meat; learning about the history of agriculture of Virginia by simulating common agricultural practices; and ultimately learning life skills.

Teacher's comments included:

**"Being able to see it being done and the incorporation of the SOLs made me feel confident that I could do it in my classroom."**

**"Animals being used to teach the students about agriculture and having it tie in to the SOLs worked perfectly."**

**"I loved seeing the kids learn about where food comes from."**

This quality of the UAD, being observable, allowed the teachers to see firsthand the innovation which increased the likelihood for adoptability. Being able to observe the results lowered uncertainty and encouraged opportunities for discussion.

## RESULTS

The Diffusion of Innovation theory was utilized to provide theoretical underpinning to how UAD was perceived by these teachers in order to observe the process of diffusion (communication among the members participating within their social system) and whether this innovation was to be adopted or rejected.

There were five main questions in a post-then format survey to identify intentions of behavioral change in relation to the teacher's perceptions. After UAD was held, the teachers (n = 8) were asked to estimate their level of ability by circling one of the following statements using a scale of 1—5, with 1 being disagree and 5 being agree with respect to their intentions before and after the event.

1. Bring 5th graders to the Urban Agriculture Day annually.
2. Incorporating more agriculture concepts in the classroom.
3. Using agriculture concepts to reinforce SOL objectives.
4. Improving the agricultural literacy of my students.
5. Utilizing Farm Bureau's Ag in the Classroom plans in the next school year.

Before and after intention results can be seen below in figure 1.

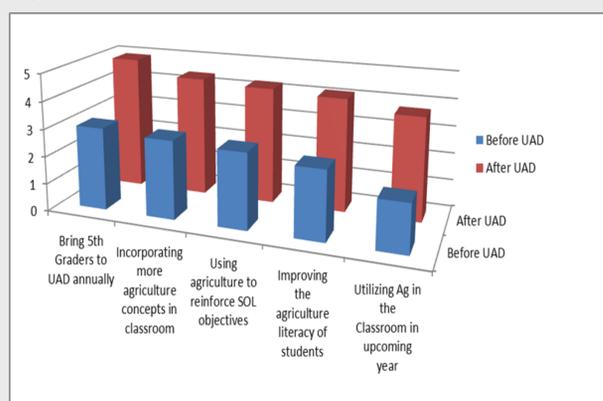


Figure 1. Illustrates the teachers' intentions to adopt certain methods before and after the UAD.

## CONCLUSIONS

Through the Diffusion of Innovation, the UAD demonstrated new techniques to the teachers using agriculture as its theme. In regards to the findings of the teachers surveyed, it is highly opportunistic that the UAD will be adopted for the future as well as the lessons incorporated within.

The teachers which participated in this program have become empowered to change their approach to things in the classroom in order to make a positive change. Lastly, while it is hoped that the SOL scores of the 5th grade students will increase due to the elements of this program, the teachers gained new knowledge and curriculum to add to their classroom exercises.

## DISCUSSION

The Diffusion of Innovations (DOI) as it pertains to the UAD examined the teachers' perception of change and cause to reinvent the process in which they teach as it pertains to integrating agriculture into their curriculum. In DOI it is not people who change, but the perceptions of the innovations (Robinson, 2009). The DOI theory as it pertains to the UAD focused on the potential adopters (the teachers) perception of the UAD's (innovation) characteristics. Rogers' (2003) DOI characteristics include:

1. Relative Advantage – the degree to which an innovation is perceived better than the idea it supersedes. In relation to the UAD, the greater the perceived relative advantage is, the higher the possibility of the rate of adoption.
2. Compatibility – The degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters. In regards to the UAD, if the teachers thought of the ideas as contradictory to their values, norms or practices, then the idea will not be adoptable easily.
3. Simplicity – the degree to which an innovation is perceived as difficult to understand and use. If the teachers were able to understand the ideas and believe that the innovations and ideas will be understood by the students more rapidly then it is a much higher probability rate of its acceptance.
4. Trialability – the degree to which an innovation may be experimented with on a limited basis. Because of the multiple trials being represented with the UAD the teachers will be less uncertain of the innovation.
5. Observability – the degree to which the results of an innovation are visible to others. Throughout the UAD, the teachers witnessed to the students' understanding of the SOL objectives. If the results were visible, then the likelihood of the event being accepted increases and also stimulates discussion between peers.



## REFERENCES

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