Rollin' with the Curriculum: A Contextualized Agricultural Education Curriculum Planning Experience for Undergraduates

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Introduction and Need for Idea

Course and program planning is a central topic taught in many agricultural education teacher preparation programs. With eight unique agricultural, food and natural resource pathways (Ortiz, 2023), and endless possibilities for facilities and resource opportunities, it is nearly impossible to predict and simulate a replica of each pre-service teacher's future agricultural education program. The agricultural education curriculum is influenced heavily by both context and content (Roberts & Ball, 2009). Context refers to the environment, resources, or surroundings in which programs find themselves, while content refers to what is being taught and how it is being delivered. While the context and content of each program may vary, we can provide pre-service teachers with exposure to examples of both context and content they will interact with in their careers and provide low-stakes opportunities for them to practice developing program and curriculum plans.

This idea stemmed from the significant needs which have been identified both formally through research, and informally based on the concerns posed by pre-service teachers. Research has identified pre-service teachers need more experiences centered on building their self-efficacy and confidence (McKim & Velez, 2017) before entering the classroom, and that curriculum and program planning is a key issue needing to be addressed as pre-service teachers prepare to enter the classroom (Ball et al., 2007; Sanders et al., 2023; Smalley & Hainline, 2024). Providing pre-service teachers with positive experiences in their preparation program will help them begin their careers in the classroom on a positive note and may reduce teacher attrition (Smith et al., 2024). These findings are validated by the concerns that were indicated by the pre-service teachers at the start of their senior year methods course, which led to the desire to develop this engaging, student-centered and inquiry-based learning experience for the pre-service teachers.

Methodology

Pre-service teachers are divided into pairs and roll a dice 12 times, once for each of the 12 factors in Figure 1. The factors were developed based on the curriculum planning factors addressed in the course. Pairs record the number which results from each roll along with the names of the 12 factors (ex: Grade Level and Requirement, Content Area, etc.). Once all have rolled, distribute Figure 1 on a worksheet to ensure they do not cheat! The numbers they rolled correspond with a number 1 through 6 for each of the factors. These are the 12 factors they have to work with as they design their course. Pairs have 45 minutes to plan:

- ➔ A course name and time of year
- ➔ 5 questions to ask administrators, community members, and students
- ➔ 10 curricular or community resources
- ➔ 3 end-of-course goals
- ➔ 3 summative assessments

Figure 1: *12 Factors in Activity*

Grade Level and Requirement	Content Area	Length of Course
1. 7th-8th grade (required) 2. 9th grade (elective) 3. 9th-12th grade (elective) 4. 12th grade (required) 5. 7th-12th grade (elective) 6. 10th-11th grade (elective)	1. Agribusiness Systems 2. Animal Systems 3. ENR Systems 4. Food Products Systems 5. Plant Systems 6. PST Systems	1. 45 days (1 quarter) 2. 60 days (1 trimester) 3. 90 days (1 semester) 4. 120 days (2 trimesters) 5. 180 days (full-year) 6. Wildcard (you choose)
Length of Class Period	**Approx. Budget for Course**	**School Location and Course Size**
1. 45 minutes 2. 50 minutes 3. 60 minutes 4. 75 minutes 5. 90 minutes 6. Wildcard (you choose)	1. $50 2. $100 3. $200 (can require fee) 4. $250 (can require fee) 5. $500 6. $1,000	1. Rural (5 students) 2. Rural (20 students) 3. Suburban (15 students) 4. Suburban (35 students) 5. Urban (30 students) 6. Urban (40 students)
Facilities	**Community and School Priorities**	**Community Resources**
1. Unlimited facility and equipment available 2. Welding shop; medium classroom with 15 outlets 3. Greenhouse; kitchen; welding shop; small classroom with 10 outlets 4. Greenhouse; 2 large classrooms and a flex lab space with 60+ outlets 5. Kitchen; 2 classrooms with only 3 power outlets 6. 2 classrooms with 30 outlets; school forest	1. Community likes to see strong workforce skill development 2. Community sees value in student job placements while in high school 3. Desired increase of careers in the trades 4. Need to increase language arts test scores 5. Need to increase math test scores 6. Need to increase science test scores	1. School is walking distance to a farm/business that relates to the content 2. Ag advisory board member is an expert in this area and can help 3. Local agricultural college willing to help in any way you need 4. The elementary school is a strong partner 5. Local business plans to donate $3,000 this year 6. Wildcard (you choose)
Other Considerations A	**Other Considerations B**	**Other Considerations C**
1. Course must meet a state graduation requirement 2. No student technology is available at all at any time 3. Strict no food or allergen rule in all spaces besides the school cafeteria 4. You must teach this class in a carpeted space with no windows 5. Many students have a 5th grade reading level 6. You do not have a sink anywhere near your classroom	1. You will teach 2 sections, so cut your budget in half 2. Your teaching partner and you are sharing a large classroom to teach during the same class period 3. Whole class trips more than 1 mile away are not allowed during school day 4. You will end up having 20 snow days during course 5. 3 students have limited English proficiency 6. You can never assign any homework at your school	1. The school WiFi is awful 2. The class is 1st hour, so it will usually be too cold out in the mornings 3. The class is 7th hour, so many students will leave early for sports or after-school activities 4. The class period is split in half by the lunch hour 5. There have been recent concerns and issues with lab and shop safety 6. There are only 10 members in FFA chapter

- ➔ A scaffolded course map containing 3 units with approximate length, 3 lesson ideas (per unit), 3 AFNR or state standards (per unit), and 3 resources that can be utilized (per unit).

After the 45 minutes have expired, pairs are asked to present an overview of their course, considering all of the limitations or resources they had to work with in their development. Discussion follows each group's presentation, sharing limitations, areas that could be changed, or potential resources or stakeholders that could be leveraged in "real life" to address the barriers.

Results and Implications

Pre-service teachers gained confidence in their ability to plan a course from start to finish. This is a low-stakes and fun way to share ideas and simulate potential real-life scenarios they may face when designing courses. For example, assigning course fees is an option for some individuals in the "Approximate Budget for Course" factor if they roll a 3 or a 4. Depending on the other factors they rolled, some pairs may choose to assign the fee, but this leads into a powerful discussion on equity or the idea of locating or leveraging other resources outside of what is presented within the scope of the activity, to create an equitable learning environment. Additionally, having pre-service teachers think about several key challenges associated with areas such as teaching with limited power outlets, in a specific type of environment (rural, suburban, or urban), or having the lunch period interrupt each class period, enables pre-service teachers to consider how they may address these roadblocks. The activity builds collaboration and helps pre-service teachers recognize the approach to planning an entire course does not to be as intimidating as it may seem. Pre-service teachers leave the activity feeling energized and confident, having gained several new ideas for innovative approaches to designing curriculum. One student shared "planning isn't as bad as I thought it would be, it just takes a bit of creative thinking," while another noted "this activity helped me a lot because it shows important concepts that go into making a course curriculum, and I now know that I'm fully capable of doing that."

Future Plans and Advice

In the future, this activity will continue to be facilitated in the agricultural education methods course. This was beneficial to include before teaching the pre-service teachers about writing individual lesson plans because it provides context and a range of factors they must consider prior to writing lesson plans so that they truly meet the needs of the program. If desired, the length of the activity could be extended to allow pairs to have additional time to develop a more concrete plan. There are opportunities to present this activity in other courses as is, or it could easily be modified to be used in other courses taught in a teacher preparation program, such as an FFA program management course. In that type of course, pre-service teachers can work with the resources they "roll" to simulate planning a program of activities with their FFA members. In implementing this activity, one piece of advice is for the pairs to upload images or copies of their course plans into a folder to share with their peers for ideas on scaffolding and organizing courses. This further increases the collaboration within the cohort, while providing the pre-service teachers with several informal examples of how they might go about organizing a course within the parameters of their program's context, opportunities, or limitations.

Costs and Resources

Implementing this idea does not require any resources beyond dice (<$2), printing out the student sheets (<$2), and having student internet access is helpful but not necessary. An online dice simulator can be used instead of actual dice.

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