SportSense: Engaging youth in data science experience in in-school and out-of-school K-12 contexts

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Session Description

For the past several years, our team has been developing and implementing curriculum and tools for integrating sports in data science learning experiences (Bodon, Kumar & Worsley, 2022; Kumar & Worsley, 2023; Kumar, Ali, & Worsley, 2023; Perez, Jones, Thompson and Worsley, 2019; Wallace, Quiterio, Kumar & Worsley, 2023; Worsley, 2022). We have developed a collection of activities and tools that we are eager to share with the larger data science community. The purpose of this session is to give participants an opportunity to explore some of these tools and activities in community with other data science educators and learners. The workshop will also serve as a space to try designing some new activities and ideate future directions for this work within the specific contexts of each workshop participant. Hence, we propose this workshop as a set of resources and a community that might spur new ideas that participants can adapt and extend based on the goals, needs, and affordances of their respective contexts.

Workshop Overview

At a high level, this session will involve a few cycles of playing, adapting, and showcasing, to give participants ideas about what types of sports-related data science experiences they might employ within their specific context. The SportSense/BKP team has developed several hours of content to support sports and data science experiences across contexts and age groups. Participants will hear a short description of some of the activities, and then pick one to investigate and test within a small group (2-3 participants). Participants will engage in structured discussions around how they might adapt the activity to their specific community and/or highlight new technological needs to effectively implement the activity within their local spaces. Participants will share those ideas with others, and then perform another round of testing and adapting. Participants will have the option to continue building out their creation from the first round, form new teams, or select a new activity to test and refine. The expectation is that all the activities that participants create will be included in a public repository for future use by data science educators. A time based breakdown of the activities that be found below:

Time:	Description:
10 minutes	<u>Introductions, Goals, and Overview:</u> We will commence by having participants introduce themselves. As part of the introductions, we will invite participants to share links to activities that they feel bridge data science and sports. We will then move on to talking about the goals of this workshop. As part of this, we will introduce the SportSense/BKP work at a high-level and share some of our observations and design principles as they have developed over the past several years and from our different contexts. This will include many of our successes but will also feature some of our mistakes. Finally, we will bring several of the low cost technologies that we use within our programs as well as some technologies that our team has developed.
20 minutes	<u>Hands-on Testing Round 1:</u> Participants will choose from a list of activities. The list will include information about the technologies required, time allocation, context, learning objectives, and intended age group. Participants will go through the activity and propose ways that they would want to adapt the activity for their primary constituents.
10 minutes	<u>Debrief and Share-out Round 1:</u> Depending on the number of participants, some, or all, of the groups will share what they tested and their proposed changes.

20 minutes	Activity Redesign/Hands-on Testing Round 2: Groups can use this time in several ways. First, for some of the longer activities, participants may need to continue testing their activity from Hands-on Testing Round 1. Second, groups may want additional time to document their modifications to the activity or attempt to quickly build and prototype a tool (as needed). Third, participants can choose a different activity from the list,

	and once again go through the process of testing and adapting if for their typically learning context.
10 minutes	Debriefs and Share-out Round 2: Depending on the number of participants, some, or all, of the groups will share what they tested and their proposed changes
10 minutes	Final reflections and next steps: The team will work with each group to ensure that their materials have been included in the repository along with a description and a sample. Participants will also contribute to discussion around how best to structure and support developing new activities within this space, and how best to maintain this community moving forward.

Summary

Our goal is that participants leave the workshop with concrete and actionable ideas on how to incorporate sports and data science experiences into their specific learning context. Alongside learning about these activities in general, we want them to have a hands-on experience and also contribute to the growing number of activities that educators might utilize. At the same time, we want people to leave the workshop with the people and informational resources that they need for successful implementation within their respective spaces.

References

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