# Responding to the readings: IMS Pedagogy and the 5Es

**Orienting**:

The **orienting** stage of the IMS pedagogy is to establish with the students what is worth noticing, and what the main foci of the topic will be. This is done by highlighting what is worth understanding into meaningful representations. This begins the generation of ideas by introducing the topic material and utilising any existing prior knowledge to develop ideas. This aligns with the first two components of the **5E** model **Engage** and **Explore**. These two components are used to build enthusiasm, address existing misconceptions, demonstrate, and develop prior understanding, create authentic exploration, and gather and use data and evidence.

**Posing representational challenges**:

The **posing representational challenges** component of the IMS pedagogy is challenging students to explore ideas and concepts and provide an opportunity to represent these concepts. This is done to use representation as a key learning opportunity for students. This component can closely align to the **explore** and **explain** components of the 5E model. By posing a representational challenge it requires students to explore ideas and represent the understanding they have and represent what they’re being asked to explore. In the **explore** and **explain** components, students can further explore the topic given a refined instruction by the Teacher. As their understanding of the topic begins to increase as they explore the topic and develop their understanding, they’re given the opportunity to explain the new conclusions they can come to, and demonstrate the processes they followed to come to this conclusion. They use the data they’ve gained in the orienting and exploration of the topic to represent their understanding and can use the representation to justify their results and compare data with others.

**Building consensus**:

In the **building consensus** component, students evaluate and synthesise their ideas and representations, and make refinements and consolidations to concepts to build an agreed knowledge with the group. This aligns with the **explain** and **elaborate** section of the 5E model, where students continue to explain their understanding, collect data and experiment further to refine their understanding. Building consensus is to build an understanding and come to an overall agreement on the concept and continue synthesising ideas through experimentation and elaboration of the ideas.

**Applying and extending conceptual understanding**:

The final IMS pedagogical component is **applying and extending conceptual understanding.** This component poses the opportunity to pose further representational challenges via new concepts and contexts. This allows students to further refine and evaluate their representational understanding as their knowledge increases and provide a conclusive representation of knowledge of the concept. This aligns with the **elaborate** and **evaluate** 5E components. In these two components, students extend and apply their understanding of a scientific topic. They link their understanding with data obtained throughout the exploration of the concept and represent their new understanding. This provides the opportunity to reflect on their prior understanding and compare this to the learned outcome.

**My understanding, and applying this to my classroom**

The IMS pedagogy and the 5E model are both interchangeable and can be used in different ways and different orders to structure a lesson sequence and approach a representational opportunity. In my scientific approach I would provide opportunities for students to explore a topic and have a chance use the components when necessary. I believe it is important for the components to be integrated into scientific exploration, as it provides structured approaches that benefit students’ understanding. However, the order is not specifically in the order I have mentioned above and is always interchangeable. Therefore, when necessary, components of both the IMS pedagogy and 5E model can be used in different orders to benefit students in different ways and provide different ways to explore a concept.

**In reference to the Module 5 activities and discussion:**

Cripps Clark J (2021) Module 1 [Seminar 5 Module: IMS Learning – Current research in the classroom], Primary Science and Technology Education EPS735, Deakin University.