MATHEMATICS AND PHYSICS: A SHARED LANGUAGE

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Many scholars, researchers, and practitioners have advocated some form of cross disciplinary approach or integration between mathematics, science, and technology (eg. Coxford, 1995). To this end, curriculum materials have been developed and research has been conducted (Jones, 2002). Marrgonelle (2002) reported the notion of using "physics as a transitional tool" in the learning of calculus. However, what does not appear in the current corpus of literature is how mathematics teachers perceive school science and likewise how science teachers perceive school mathematics with respect to integration. This study of three high school teachers begins to investigate these perceptions by focusing on the concept of function as it arises both in the teaching of school mathematics and the teaching of school physics.

Preliminary results of this study indicate that mathematics teachers perceive that physics teachers do not use mathematics in as rigorous a manner as they believe should be the case, and physics teachers believe that mathematics teachers are overly abstract in their presentation of mathematical concepts in physics contexts. This poster will discuss data, which illustrate the respective points of view and will provide examples of the language used which typifies the different perspectives. This poster will conclude with suggestions about how teachers might move towards a shared language, which might help to achieve a constructive reconciliation between school mathematics and physics.

References

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