Transition from Secondary to Tertiary Education

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Aims and Ideas

The modern world thrives on quantitative information. Consequently, many university majors are becoming increasingly mathematical. Many secondary school graduates, however, are not ready for tertiary course work in mathematics and statistics. For example, 35.1% of U.S. college mathematics enrollments are in pre-college remedial courses: 1.4 million out of 3.9 million in autumn 2010 (Blair, Kirkman, & Maxwell, 2012). Such deficiency in mathematical knowledge and skills can influence students' decisions to abandon their intended major and transfer to a less mathematically demanding major, or even to quit tertiary education. This discussion group examined the difficulties that students encounter in making the mathematical transition from secondary to tertiary education. The group explored methods used to assess student readiness in mathematics and programs to help beginning tertiary students when they face mathematical struggles. The discussion considered both students who seek mathematically intensive majors at the tertiary level and those who pursue less mathematically intensive degrees.

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Structure

The organizing team (co-chairs and team members) provided introductions on the theme of the *Transition from Secondary to Tertiary Education* to provide a framework for the discussions and spent most of the sessions facilitating the discussion among the participants. The sessions were structured (a) to provide contexts for discussion, (b) to simulate discussion, and (c) to get the participants involved and draw out their ideas. The participants represented a wide variety of nations. The following tables list topics that were presented and discussed.

Tuesday timeline	Topic	Format and presenter
16.30–16.35	Welcome, introductions, and overview	5-min led by Foley
16.35–16.55	Issues in the transition from secondary to tertiary mathematics education: North American perspectives	16-min presentation by Foley and tanner + 4 min of questions and answers
16.55–17.10	Are University freshmen mathematically ready?	12-min presentation by Khoshaim for Er + 3 min of questions and answers
17.10–18.00	Issues in the transition from secondary to tertiary mathematics education	Small-group discussion followed by whole-group discussion, facilitated by team members
Friday timeline	Topic	Format and presenter
16.30–16.35	Welcome, introductions, and overview	5-min led by Foley
16.35–16.50	Issues in the transition from secondary to tertiary mathematics education: a South American perspective	12-min presentation by Celis + 3 min of questions and answers
16.50–17.05	How Saudi Arabia addresses the challenges of transitions from secondary to tertiary education	12-min presentation by Khoshaim + 3 min of questions and answers
17.05–17.15	The role of Universities in the transition from secondary to tertiary mathematics education in Jordan	8-min presentation by Foley for Alshawa + 2 min of questions and answers
17.15–18.00	Issues in the transition from secondary to tertiary mathematics education	Small-group discussion followed by whole-group discussion, facilitated by team members

Reference

Blair, R., Kirkman, E. E., & Maxwell, J. W. (2012). *Statistical abstract of undergraduate programs in the mathematical sciences in the United States: Fall 2010 Conference Board of the Mathematical Sciences survey*. Providence, RI: American Mathematical Society.

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