

can be especially valuable in the domain of educational measurement prediction studies, which have historically relied almost exclusively on quantitative methods.

Although three of the most recent predictive studies in language testing used both quantitative and qualitative methods to gather data from faculty or students or both (Cotton & Conrow, 1996; Kerstjens & Nery, 2000; Lynch et al., 1999), they failed to integrate findings from the different methods. All of these studies investigated the predictive validity of the IELTS through statistical correlations between IELTS score and GPA, along with varying forms of qualitative data. Lynch et al. (1999) collected qualitative information from students only, using interviews and questionnaires. Cotton and Conrow (1998) used questionnaires with students and faculty members and interviews with students. Kerstjens and Nery (2000) used interviews with faculty members and questionnaires with students.

Moreover, the primary intent of including qualitative methods and data in all three of these studies was for purposes of triangulation. For example, in Kerstjens and Nery's (2000) study, the research question was phrased as follows: To what extent do perceptions

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The authors posed two research questions in this mixed methods study:

1. The first question is a quantitative inferential research question that relates independent and dependent variables.

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2. The second question is a mixed methods question that indicates the procedures for mixing the qualitative data with the quantitative data (to use the qualitative to develop a better understanding of the quantitative results).

various facets, dimensions, and even definitions of academic performance (rather than the same facets or the same definitions, as is required in a triangulation design for convergence). This use of mixed methods to generate a more complete and elaborated understanding of the various dimensions or facets of a complex phenomenon is called complementarity in Greene, Caracelli, and Graham's (1989) framework.

The following research questions were addressed in this study:

1. To what extent do scores on an institutional ESL placement test (the Computerized Enhanced ESL Placement Test [CEEPT]) predict international graduate students' academic performance and their language difficulties in content courses during the first semester of their graduate education?
2. To what extent and in what ways do qualitative interviews with students and faculty members serve to contribute to a more comprehensive and nuanced understanding of this predictive relationship between CEEPT scores and student academic performance, via integrative mixed methods analyses?

Methods

Mixed Methods Design

This complementarity mixed methods predictive validity study has several innovative features. First, it presents a mix of methods within the context of a correlational design