De La Salle University – Dasmariñas
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ENTRY-LEVEL TECHNICIAN SKILLS FOR SEMICONDUCTOR INDUSTRY: A COMPARATIVE STUDY ON MANAGEMENT EXPECTATIONS AND STUDENTS' PERCEPTIONS

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ABSTRACT

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The purpose of this study was to identify the mismatch in skills of semiconductor manufacturing technicians by doing a comparative study of the managers' expectations of technical graduate skills with students' perceptions of the skills that the semiconductor managers valued. The issue was investigated by defining the skills needed for entry-level semiconductor manufacturing equipment technicians focused on the first six months on the job and by surveying samples of both populations using a self-completion survey instrument that required each group to rate the importance of a range of semiconductor manufacturing technician skills. An existing foreign semiconductor manufacturing technician skill standard was adopted and developed as a survey instrument.

The responses to each of the skills were standardized for each individual. The comparisons of the ranked standardized means were used to analyze and compare the relative importance of skills within groups (managers or students) and the comparison of the standardized means was used to assess the relative importance of skill standard between groups. Results were considered first at the skill standard descriptors level, then for the aggregated skill standards group. To reveal any significant differences in the importance rating of the skills, *t* test of the standardized means was conducted.

The analysis of the ranked skill standard descriptors and skill standard groups shows the amount of differences among semiconductor industry managers and students about the most important skills for a graduate entering a semiconductor industry graduate traineeship or entry-level technician position. This result demonstrates that students have no realistic perceptions of the skills that semiconductor industry managers valued.

The variations or gaps in the ranking of skills were found to be significantly different. This reveals that there are significant differences between management expectations and students' perceptions of the entry-level semiconductor technician skills that the managers valued. The gaps and the differences describe the skills mismatch that is being felt between the technical graduates' skills and the skills requirement of the semiconductor industry.

The results challenged educators to align the graduates' skills to the skill needs of the industry using the validated skill standards. Close collaboration between technical schools and semiconductor companies is recommended to look into the opportunities of setting up a specialized course for semiconductor technology.

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