EDUCATIONAL UPGRADING OF INSTITUTE OF TECHNICAL EDUCATION (ITE) GRADUATES

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This paper is a collaborative effort between
Manpower Planning & Policy Division, Ministry of Manpower and
Higher Education Division, Ministry of Education

I. INTRODUCTION

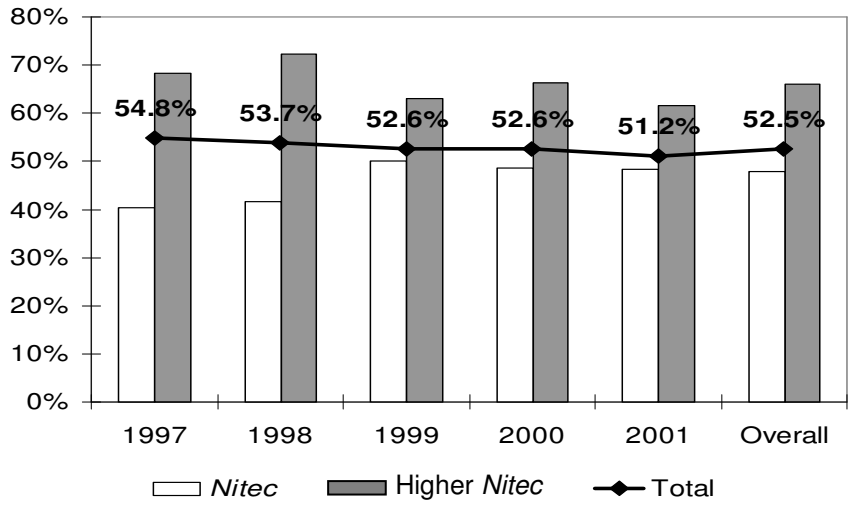
1. Educational upgrading in Singapore is becoming more common at various qualification levels. This study assesses the trend of educational upgrading and its returns amongst graduates from the Institute of Technical Education (ITE).[1] It follows a 2005 study on upgrading amongst polytechnic graduates. Both studies were jointly developed by the Ministry of Education (MOE) and the Ministry of Manpower (MOM).

II. SURVEY FINDINGS

Slightly over half upgrade

2. **Likelihood of upgrading.** Over half (53%) of Higher *Nitec* and *Nitec* graduates who responded to the survey upgraded[2] within 5 to 10 years of graduation (see Chart 1). The majority (two-thirds) of them upgraded to a Diploma as their highest qualification.

Chart 1: Proportion of ITE Upgraders by Graduating Cohort



[1] A survey was conducted in 2007 on the 1997-2001 cohorts of ITE (Higher *Nitec* and *Nitec*) graduates. The results in this study are based on the information provided by the 9,340 graduates who responded. They represent 55.1% of the 16,940 graduates surveyed.

[2] The comparison is between the respondent's current qualification, and the first certificate with which he graduated from ITE. It includes *Nitec* graduates who went on to pursue a Higher *Nitec* certificate. Unless otherwise stated, upgraders refer to all who had either completed or were still pursuing their qualification.

3. **Upgrading route.** 71% of those who pursued a Diploma did so in the local polytechnics, with the other 28% earning their Diploma qualification via overseas certifications awarded by local private institutions. Amongst those who went on to pursue their Degrees, about a quarter (27%) did so in the publicly-funded local universities, i.e. National University of Singapore (NUS), Nanyang Techonological University (NTU) and Singapore Management University (SMU), while the majority (52%) obtained theirs via overseas certifications awarded by local private institutions.

4. **Course choice[3].** The majority (82%) of Science & Technology[4] (S&T) graduates from ITE who upgraded continued to pursue an S&T qualification. Conversely, 89% of the non-S&T graduates who upgraded did so in a non-S&T course.

Career and personal aspirations drive upgrading

5. **Reasons for upgrading.** The survey asked those who upgraded at each level their reasons for upgrading. In general, upgraders sought further studies to fulfil their career and personal aspirations. 52% of those who upgraded to a Higher *Nitec* or Diploma certification did so to secure a better-paying job. In contrast, this proportion was lower among upgraders who pursued higher qualification levels, for e.g., Advanced/Specialist Diplomas (44%) and Degree (46%). On the other hand, at the Advanced/Specialist Diplomas and Degree levels, the proportions who upgraded so that they could qualify for promotion (15% and 14% respectively) were higher than those at the Higher *Nitec* (9%) and Diploma (11%) levels. The proportion who upgraded to fulfil personal aspirations remained stable at about 30% across all levels.

6. **Reasons for not upgrading.** Work and/or family commitments (cited by 56% of all respondents across all qualification levels who indicated that they did not intend to upgrade further) featured prominently as the key reason the ITE graduates chose not to upgrade, compared to other reasons such as lack of financial resources (18%) and lack of interest (17%) in upgrading.

[3] This analysis is based on upgrading to Higher *Nitec*, Diploma and Degree levels only. ITE upgraders who upgraded to Professional Qualifications or Advanced/Specialist Diplomas form a very small proportion (6%) of upgraders.

[4] ***Nitec* S&T courses:** *Electronics & Electrical Technology, Mechatronics & Mechanical Technology, Precision Engineering, Building Drafting, Automotive Technology, Building Services Technology, Chemical Process Technology.* ***Nitec* non-S&T courses:** *Nursing, Office Skills*. **Higher *Nitec* S&T courses:** *Electrical & Electronics Engineering, Mechanical & Manufacturing Engineering, Information Technology*. **Higher *Nitec* non-S&T courses:** *Business, Accountancy*.

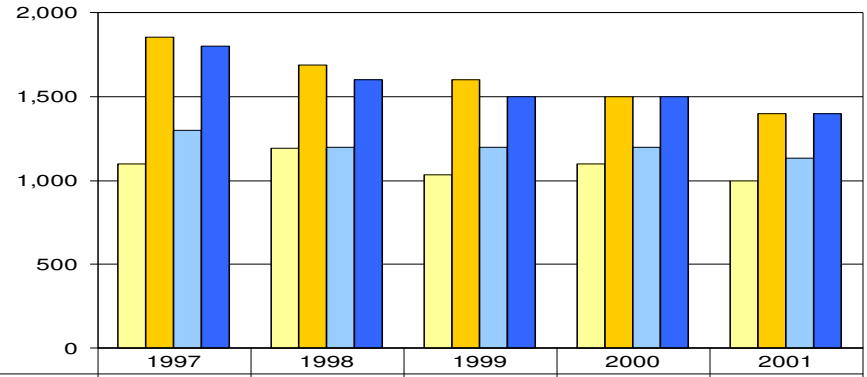
III. RETURNS TO UPGRADING[5]

Upgrading yields a positive wage premium

7. **Impact of upgrading on wages.** The current gross median wages of both *Nitec* and Higher *Nitec* upgraders were higher than the wages earned by non-upgraders from the older cohorts. (Charts 2 and 3). However, the wages of upgraders and non-upgraders from the younger cohorts were fairly comparable. This could be due to a longer period of time for the older cohorts to demonstrate and make use of their higher skills and knowledge at work after upgrading.

8. A regression analysis was conducted to study the impact of upgrading on the wages of ITE graduates. *Nitec* and Higher *Nitec* upgraders earned positive wage premiums[6] from upgrading relative to their peers who did not upgrade, holding fixed all other factors such as gender, age, cohort, industry and occupation type. The wage premiums were 11.6% and 12.8% for *Nitec* and Higher *Nitec* upgraders respectively. Analysis of the wage premium disaggregated by the upgrading steps taken revealed consistently significant positive wage premiums from upgrading to a Diploma and Degree for both *Nitec* and Higher *Nitec* upgraders.

Chart 2: Gross Median Wage of *Nitec* Graduates

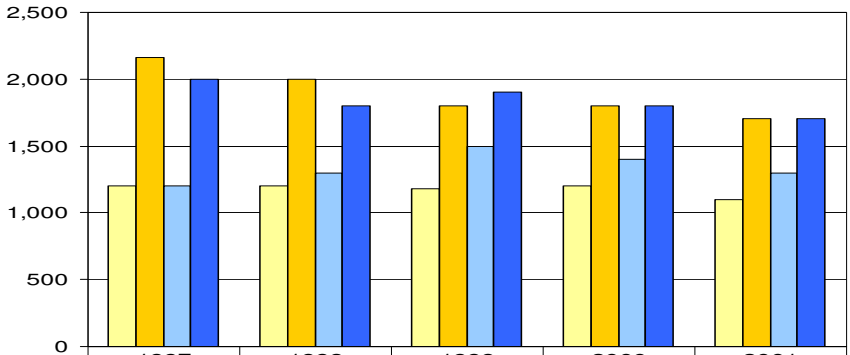


	1997	1998	1999	2000	2001
Gross median wage of upgraders after Nitec graduation	1,100	1,190	1,033	1,100	1,000
Gross median wage of upgraders in 2007	1,850	1,690	1,600	1,500	1,400
Gross median wage of non-upgraders after Nitec graduation	1,300	1,200	1,200	1,200	1,130
Gross median wage of non-upgraders in 2007	1,800	1,600	1,500	1,500	1,400

[5] Upgraders in this segment of the report refer only to ITE graduates who had completed their higher qualifications as of June 2007.

[6] The wage premium for upgraders refers to the larger difference between their gross monthly wage after upgrading to their highest qualification and their wage earned in their first job after graduating from ITE, as compared to the non-upgraders.

Chart 3: Gross Median Wage of Higher *Nitec* Graduates



	1997	1998	1999	2000	2001
Gross median wage of upgraders after Higher Nitec graduation	1,200	1,200	1,178	1,200	1,100
Gross median wage of upgraders in 2007	2,164	2,000	1,800	1,800	1,700
Gross median wage of non-upgraders after Higher Nitec graduation	1,201	1,300	1,500	1,400	1,300
Gross median wage of non-upgraders in 2007	2,000	1,800	1,900	1,800	1,700

9. **Other returns from upgrading.** The finding of a positive wage premium corroborates with the opinions of the majority of ITE upgraders who indicated in the survey that upgrading had positively impacted their career progression, salaries, skills and productivity, and career prospects.

IV. IMPACT OF UPGRADING ON COHORT EDUCATIONAL PROFILE

Improvement in cohort educational profile

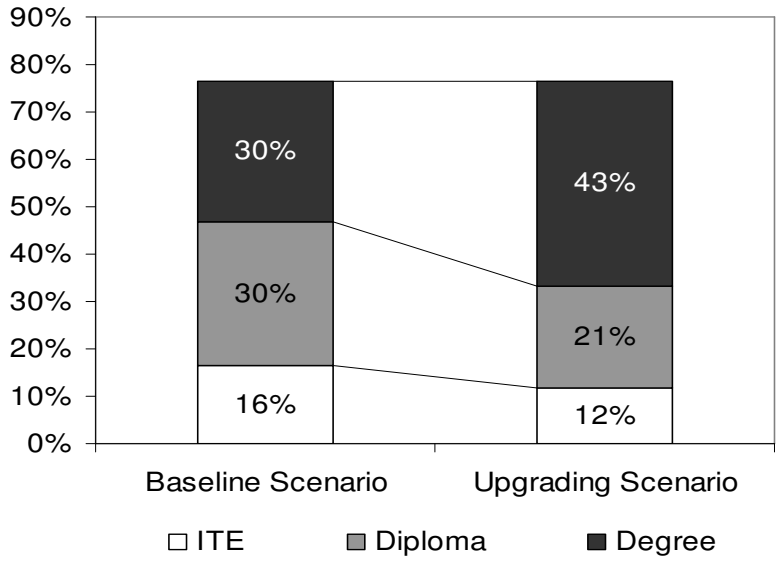
10. **Combined impact of upgrading at the polytechnic and ITE levels.** The results from the polytechnic and ITE upgrading studies are combined to derive the overall impact of upgrading on the educational profile of a Primary 1 (P1) cohort of 50,000 students (see Chart 4).

11. The *baseline scenario* assumes no upgrading of Diploma holders and ITE graduates beyond the full-time places offered at our local universities and polytechnics.[7] When various other upgrading pathways (including part-time, overseas and distance-learning) are taken into account (*upgrading scenario*), the proportion of the cohort with ITE qualifications falls by a quarter, from 16% to 12%. More markedly, the share of Degree-holders among the cohort increases from 30% to 43%[8], while the share of those with Diploma qualifications falls from 30% to 21%.

[7] Currently about 16%, 30% and 24% of each P1 cohort graduate with ITE, Diploma and Degree qualifications respectively from our publicly-funded institutions. 6% of A-level students pursue their Degree qualifications overseas.

[8] This scenario is derived given that (i) 49.8% of Diploma graduates upgrade to a Degree; and (ii) 83% of ITE upgraders upgrade beyond an ITE qualification.

Chart 4: Impact of Upgrading on Cohort Educational Profile



V. CONCLUSION

12. The upgrading of ITE and polytechnic graduates results in a significant improvement in the cohort educational profile. Overall, the supply and share of degree-holders in each cohort is substantially increased. ITE upgraders also enjoy positive returns from their upgrading efforts in the form of improved wages, skills, and career prospects.