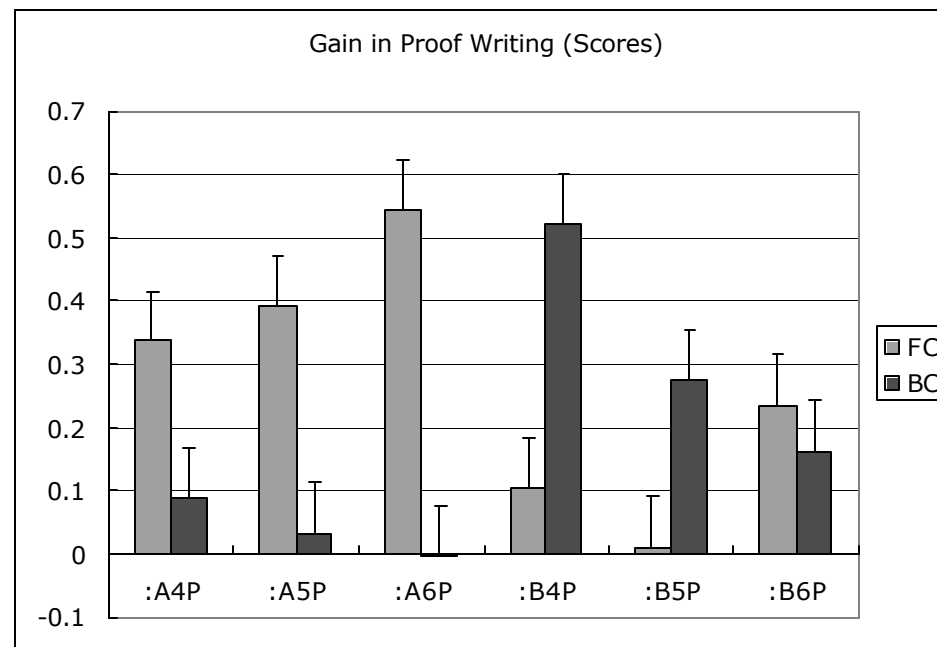


Graphs in upper rows shows average score (% correct proof steps) for each proof-writing test items. Number of proof steps varies from item to item.

Bottom graph shows gain bwt Pre- and Post-test.

(\*) Proof #4 and #5 in Test-A (A4P, A5P) are very similar.

(\*\*) Proof #5 in Test-B involved SSS and extra CPCTC that are not involved in Test-A.



Scoring policy:

Proof steps consists of three parts: (1) a proposition, (2) a justification, and (3) premises. Each considered to be correct when following conditions hold:

Proposition: it is true and is a part of a proof.

Justification: it concludes the proposition being justified. If redundant, count only once.

Premises: all correct premises are in the proof and mentioned with their line numbers.