

Thesis Title Opinions and Needs about Teaching-Learning on
Natural Resources and Environment Conservation
Course of Secondary School Students in Bangkok.

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ABSTRACT

The aims of this research were to study the opinions and needs of the secondary school students in Bangkok on teaching and learning in natural resources and environment conservation course in the aspects of course objectives, content, study method, learning activity, teaching aids, as well as evaluation and assessment; and to make comparisons of their opinions and needs by employing school sizes, class levels, performance levels, and natural resources and environment conservation activities as the variables.

Regarding data collection, questionnaire was distributed among 353 secondary school students in Bangkok who studied this subject in the first semester of the 1988 academic year. The data obtained were relevant to statistical analysis, namely, percentage, T-Test, One Way Analysis of Variance, and Scheffe's Test of the

specific pipe length was found in the planting density of 625 trees/hectare with 118.18 centimetres. The biomass of various parts and stem volume could be estimated appropriately by using the square of diameter at ground level multiplied by total height of tree ($D_0^2 H$) as the independent variable of the allometric relation except for trees in the density of 625 trees/hectare would be estimated more appropriately by using the square of diameter at 1.30 metres aboveground multiplied by total height of tree ($D^2 H$). Both relative growth rate of stem, leaf, total aboveground, stem volume and net assimilation rate of total aboveground were inversely correlated to the stand density. The relative growth rate of each fraction, stem volume and net assimilation of total aboveground were highest in the planting density of 625 trees/hectare. Mean biomass of each part and average stem volume of tree were inversely correlated to stand density and closely followed the double log model more than the reciprocal equation of the Competition-Density effect. The largest biomass of stem, branch, leaf, wood (stem+branch), total aboveground (stem+branch+leaf) and stem volume per-tree were found in the planting density of 625 trees/hectare with 30.382, 17.993, 4.024, 47.034, 51.119 kilograms/tree and 0.086 cubicmetres/tree respectively. An area basis of biomass yield of each fraction and stem volume were directly correlated to the stand density but more closely followed the double log model than the reciprocal equation of Yield-Density effect. Biomass per area for stem, wood, total

activities induced, no significant difference at the statistical significance level of 0.01

The result of this study if taken into consideration, can contribute greatly in course designation and instruction procedure which enhances an efficient natural resources and environment conservation education.