

THE ROLE OF SCHOLASTICS ABILITY AS A PREDICTOR ON CONCEPT MAPPING AT ZOOLOGY VERTEBRATE CLASS



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Back ground of this study

- Students activity are affected by both external and internal factors
- External factors consist of: learning environment, lecturer/teacher, teaching material, class interaction, teaching media, and learning situation
- Internal factors consist of student' scholastics abilities as a learner that consist of verbal thinking, number capacity, abstract thinking , logic thinking, learning ability, language ability, motivation and the learning gap.
- Scholastics abilities are necessary as either one factor to reach the academic achievement
- The other factors that affects the academic achievement are students' knowledge, learning skill, students' talent and interest

What is the problem?

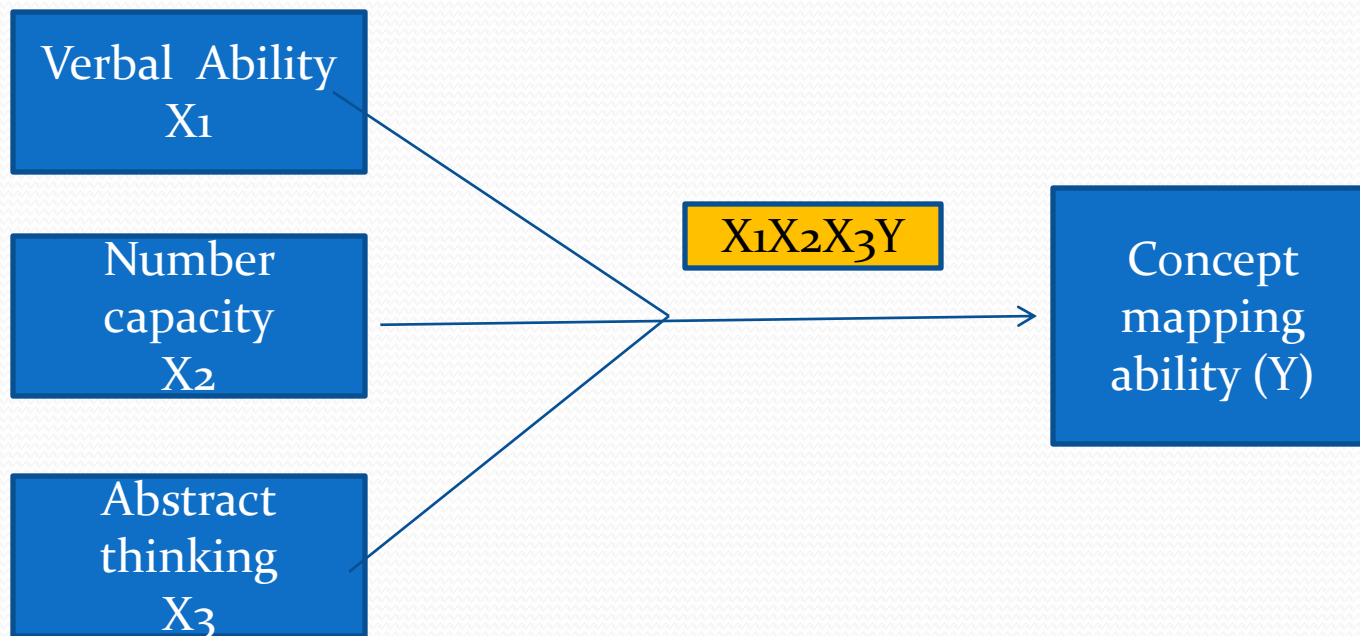
- How is the role of scholastics ability as predictor on concept mapping ability at zoology vertebrate class?



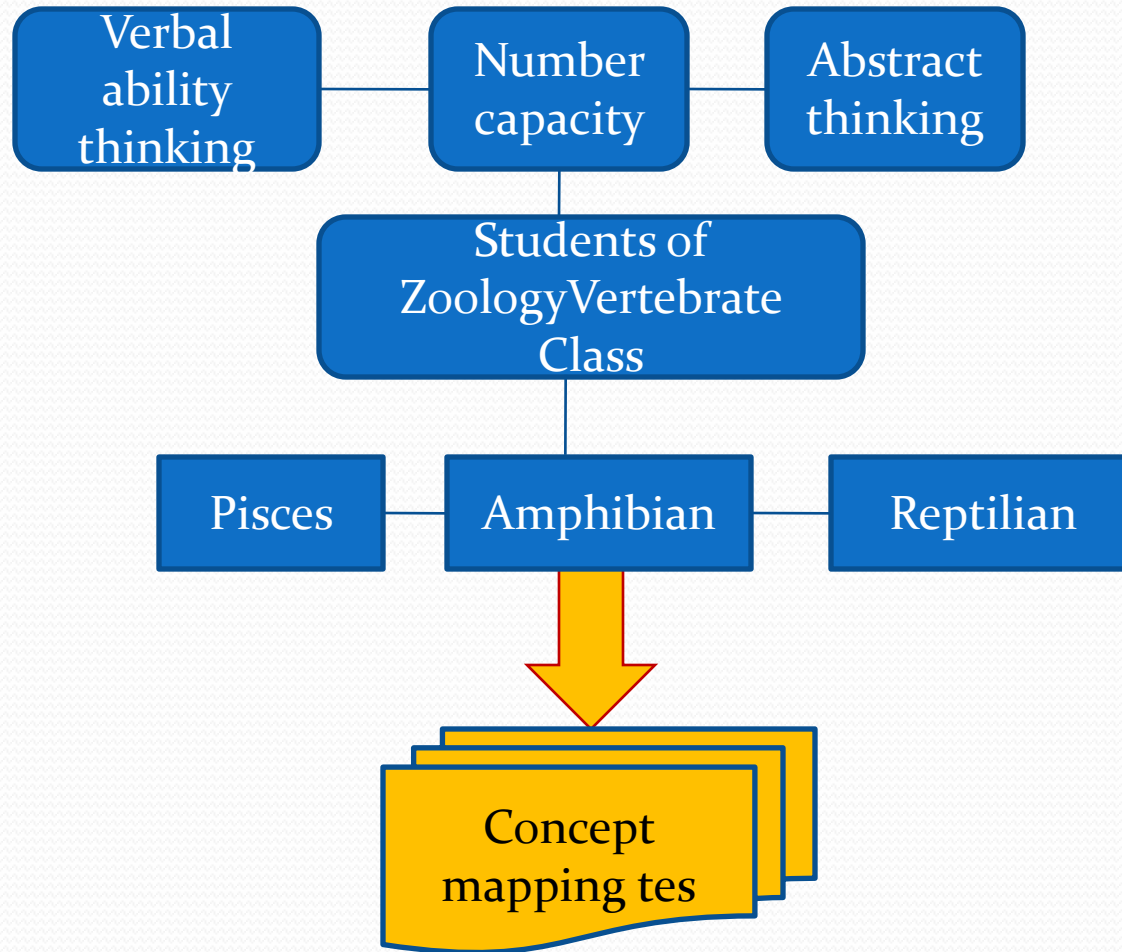
- Zoology vertebrate is a compulsory course for the 4th semester biology education students and 5th semester for biology students
- The substance of this course consist of taxonomy and systematics, diversity, distribution and the habitat of vertebrate animals especially in Indonesia.
- Content of the course consist of Superclass Pisces, class Ampibian, reptilian, Aves, and Mamalian, 2 chs (curriculum 2006).

The methods of the study

- Descriptive correlational methods



The flow of the research



Result of the Study

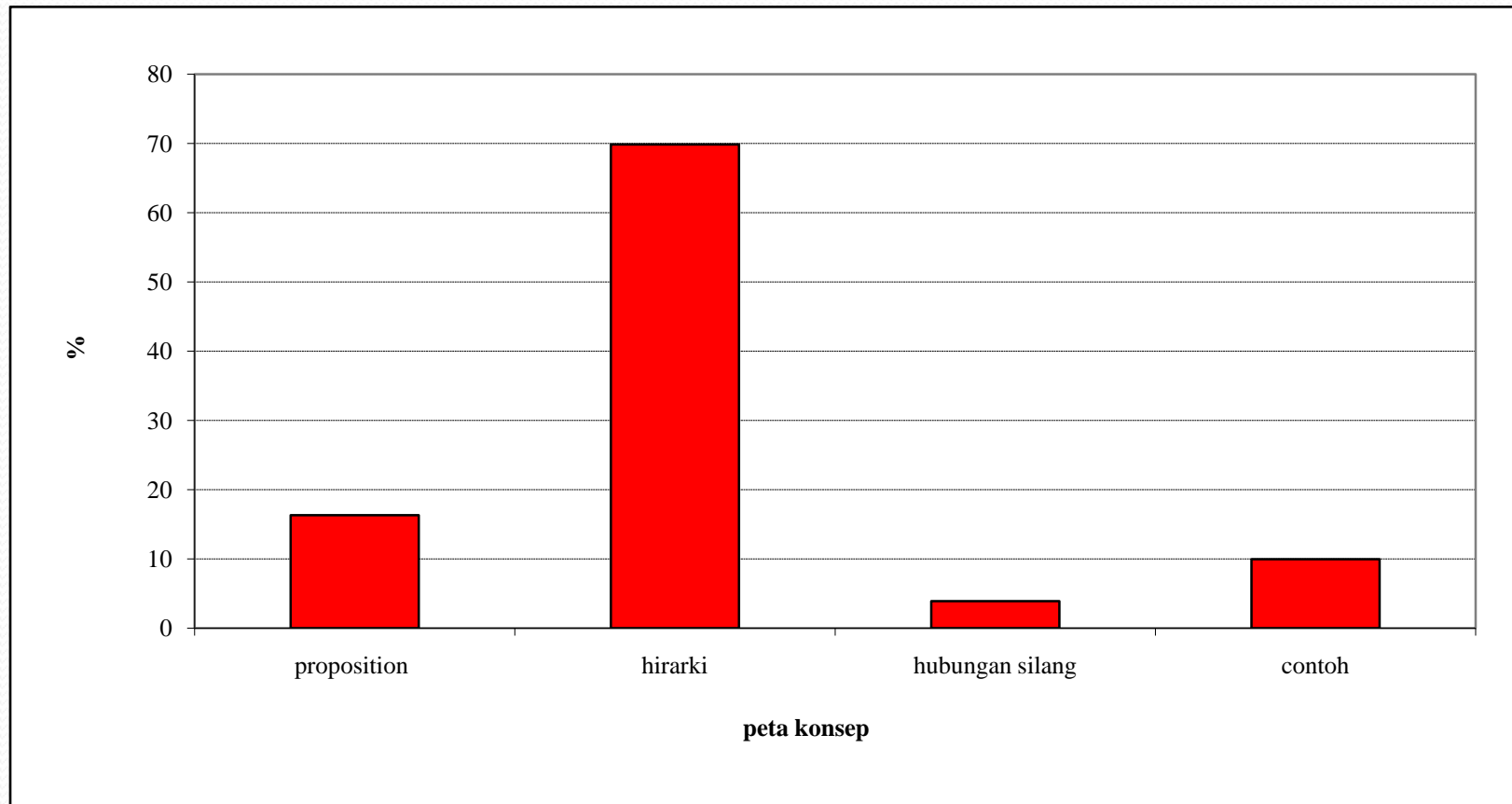
	GROUP	STATISTICS	STANDARD EROR
Mean		67,275	5,5266
Level of confidence 95%	Lower group	56,35	
	Upper group	78,20	
Median		62,70	
Variance		45,51	
Standard deviation		6,746	
Minimum score		26,6	
Maximum score		87,3	

SCORING CRITERIA FOR CONCEPT MAPS

- **PROPOSITION** → the meaning relationship between 2 concepts; indicated by the connecting line and linking words (score 1 for valid proposition)
- **HIERARCHY** → subordinate concept from general to specific concept (score 5 for valid hierarchy)
- **CROSS LINKS** → meaningful connection between one segment of the concept hierarchy and another segment. (Score 10 for valid and significant crosslink; score 2 for valid but does not illustrate a synthesis between sets of related concepts or proposition. Cross link can indicate creative ability. Unique or creative cross link might receive extra point)
- **EXAMPLES** → specific events or objects that are valid instances (Score 1)

A criterion concept map may be constructed and scored for material to be mapped; and the student score divided by the criterion map score to give a percentage for comparison (better than criterion can receive more than 100%)

Percentage of students' concept mapped criterion



Correlation Analyses

	Regression analyses	Correlation & determination coefficient	
Verbal ability to Concept Mapping	$Y=76,656-0,292X$	$r = -0,030$ $(R^2)=0,001$ (0,1%)	Receive Ho: no direct effect of verbal ability to concept mapping
Number capacity to Concept Mapping	$Y= 114,612- 7,625 X.$	$r = -0,189$ $R^2 = 0,036$ (3,6%)	Receive Ho: no direct effect of number capacity to concept mapping
Abstract thinking to Concept Mapping	$Y= 77,248-0,433 X$	$r = -0,189$ $R^2 =0,0014$ (0,14%)	Receive Ho: no direct effect of abstract thinking to concept mapping

Analyses of overall correlation

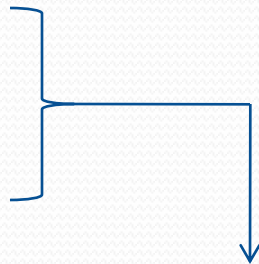
- Regression equation:

$$Y = 121,143 - 0,180X_1 - 7,60 X_2 + 0,041 X_3$$

- Based on the regression equation, the constant $a=121,143$ mean that the Scholastics ability is quite high

BUT:

- $bX_1 = -0,180$
- $bX_2 = -7,60$
- $bX_3 = 0,041$



Scholastics Ability give low contribution to concept mapping test

THE RANGE OF STUDENTS' SCHOLASTICS ABILITY

	VERY LOW	LOW	FAIR	RATHER HIGH	HIGH	VERY HIGH
VERBAL ABILITY						
NUMBER CAPACITY						
ABSTRACT THINKING						

Conclusion and Recommendation

- The role of scholastics ability as a predictor on concept mapping is very low , because academic achievement is a function of genetics potency, environment, time and learning.
- Scholastics ability can be used for placement predictor but not suitable for students' achievement predictor.
- Concept mapping test can be used as an alternative test to assess concept attainment, but rather difficult to carry out on a big class

Thank you for your attention

