Additional File 1

Use the morphological traits shown in Table A to construct a phylogenetic tree for vertebrates (any style of phylogenetic tree is fine). Be sure to clearly label all synapomorphies.

Table A. morphological traits of vertebrates (X = trait possessed by vertebrate)

		Vertebrates				
		Chinook Salmon	Marbled Lungfish	Brown Catshark	Gillaroo Trout	Alpine Newt
Traits	True Lungs		X			X
	Gizzard				X	
	Bone Skeleton	X	X		X	X
	Four Limbs					X
	Swim Bladder	X			X	

Figure S1. Version A of the phylogenetic tree construction task from the individual component of the comprehensive final exam.

Use the morphological traits shown in Table A to construct a phylogenetic tree for vertebrates (any style of phylogenetic tree is fine). Be sure to clearly label all synapomorphies.

Table A. morphological traits of vertebrates (X = trait possessed by vertebrate)

		Vertebrates				
		Saltwater Crocodile	Virginia Opossum	Alpine Newt	Merlin Falcon	Snow Leopard
Traits	Placenta		X			X
	Feathers				X	
	Claws/Nails	X	X		X	X
	Long Gestation					X
	Gizzard	X			X	

Figure S2. Version B of the phylogenetic tree construction task from the individual component of the comprehensive final exam.

Use the morphological traits shown in Table A to construct a phylogenetic tree for vertebrates (any style of phylogenetic tree is fine). Be sure to clearly label all synapomorphies.

Table A. morphological traits of vertebrates (X = trait possessed by vertebrate)

		Vertebrates						
		Gillaroo Trout	Saltwater Crocodile	Alpine Newt	Merlin Falcon	Brown Catshark	Snow Leopard	Chinook Salmon
Traits	Four Limbs		X	X	X		X	
	Gizzard	X	X		X			
	Bone Skeleton	X	X	X	X		X	X
	Claws/Nails		X		X		X	
	Feathers				X			
	Swim Bladder	X						X

Figure S3. Phylogenetic tree construction task from the group component of the comprehensive final exam that included convergent evolution (gizzard).

Table S1. Phylogenetic tree styles present in various components of the course curriculum.

Phylogenetic Tree Style	Course Textbook	Instruction [n=17]	Assessments [n=13]
Bracket	All (100%)	11 (65%)	3 (23%)
Diagonal	0 (0%)	6 (35%)	7 (54%)
Construction Task	0 (0%)	0 (0%)	3 (23%)