

Supplemental Material

CBE—Life Sciences Education

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Supplemental Tables

TABLE A: Correlations between structural features of concept maps and BioTAP ($n = 49$; p -values in parentheses).

		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q1 – Q5	Q6 – Q9
Draft	Concepts	-0.12 (0.40)	0.08 (0.61)	-0.12 (0.40)	-0.05 (0.74)	-0.11 (0.46)	-0.20 (0.16)	-0.13 (0.36)	-0.11 (0.44)	0.11 (0.46)	-0.13 (0.38)	-0.15 (0.29)
	Propositions	0.04 (0.77)	0.09 (0.54)	-0.12 (0.41)	-0.07 (0.63)	-0.18 (0.22)	-0.16 (0.26)	-0.08 (0.58)	-0.04 (0.79)	0.11 (0.47)	-0.08 (0.57)	-0.07 (0.65)
	Branches	0.20 (0.17)	0.16 (0.26)	-0.21 (0.14)	-0.08 (0.59)	-0.11 (0.46)	-0.15 (0.30)	0.04 (0.78)	-0.01 (0.92)	0.07 (0.61)	0.02 (0.92)	-0.02 (0.88)
Revision	Concepts	-0.06 (0.66)	0.00 (0.99)	0.03 (0.84)	-0.05 (0.75)	-0.09 (0.56)	-0.07 (0.66)	-0.14 (0.35)	-0.22 (0.12)	0.26 (0.07)	-0.08 (0.60)	-0.13 (0.39)
	Propositions	0.09 (0.52)	-0.06 (0.70)	-0.07 (0.65)	-0.11 (0.46)	-0.10 (0.50)	0.01 (0.92)	-0.12 (0.43)	-0.22 (0.13)	0.27 (0.06)	-0.08 (0.59)	-0.08 (0.58)
	Branches	0.05 (0.74)	-0.09 (0.55)	-0.14 (0.34)	-0.15 (0.31)	-0.07 (0.63)	-0.08 (0.57)	-0.11 (0.44)	-0.12 (0.40)	0.25 (0.08)	-0.14 (0.35)	-0.05 (0.74)
Final	Concepts	-0.06 (0.66)	0.01 (0.93)	-0.01 (0.93)	-0.05 (0.72)	-0.02 (0.91)	-0.17 (0.25)	-0.07 (0.63)	-0.04 (0.79)	-0.03 (0.82)	-0.06 (0.69)	-0.13 (0.39)
	Propositions	0.09 (0.56)	0.01 (0.96)	-0.11 (0.46)	-0.09 (0.54)	-0.01 (0.95)	-0.14 (0.33)	-0.05 (0.72)	-0.04 (0.76)	-0.01 (0.96)	-0.03 (0.84)	-0.10 (0.48)
	Branches	0.31 (0.03)	0.01 (0.95)	-0.23 (0.11)	-0.17 (0.23)	0.02 (0.90)	-0.19 (0.19)	-0.07 (0.63)	-0.02 (0.91)	0.03 (0.85)	0.02 (0.90)	-0.09 (0.54)
$\Delta(D \text{ to } R)$	Concepts	0.08 (0.59)	-0.11 (0.46)	0.22 (0.12)	0.00 (1.00)	0.03 (0.84)	0.20 (0.17)	-0.01 (0.95)	-0.18 (0.23)	0.23 (0.10)	0.07 (0.63)	0.03 (0.81)
	Propositions	0.06 (0.70)	-0.16 (0.27)	0.06 (0.70)	-0.04 (0.77)	0.08 (0.56)	0.19 (0.18)	-0.04 (0.79)	-0.20 (0.17)	0.19 (0.20)	0.00 (0.99)	-0.02 (0.92)
	Branches	-0.13 (0.37)	-0.23 (0.10)	0.05 (0.72)	-0.08 (0.58)	0.03 (0.86)	0.05 (0.73)	-0.15 (0.30)	-0.11 (0.45)	0.19 (0.20)	-0.15 (0.30)	-0.03 (0.84)
$\Delta(R \text{ to } F)$	Concepts	-0.02 (0.89)	0.02 (0.91)	-0.05 (0.74)	-0.02 (0.87)	0.07 (0.64)	-0.17 (0.25)	0.05 (0.75)	0.19 (0.20)	-0.32 (0.02)	0.00 (1.00)	-0.04 (0.76)
	Propositions	0.02 (0.90)	0.06 (0.67)	-0.07 (0.61)	-0.01 (0.93)	0.08 (0.57)	-0.19 (0.18)	0.04 (0.77)	0.15 (0.29)	-0.27 (0.06)	0.04 (0.79)	-0.06 (0.70)
	Branches	0.33 (0.02)	0.09 (0.54)	-0.16 (0.28)	-0.08 (0.61)	0.08 (0.57)	-0.15 (0.29)	0.02 (0.91)	0.09 (0.55)	-0.19 (0.19)	0.15 (0.32)	-0.06 (0.66)
$\Delta(D \text{ to } F)$	Concepts	0.03 (0.83)	-0.05 (0.72)	0.10 (0.51)	-0.02 (0.89)	0.08 (0.59)	-0.02 (0.87)	0.04 (0.81)	0.06 (0.71)	-0.14 (0.33)	0.05 (0.76)	-0.02 (0.90)
	Propositions	0.06 (0.67)	-0.07 (0.63)	-0.02 (0.88)	-0.05 (0.76)	0.14 (0.32)	-0.02 (0.87)	0.01 (0.96)	-0.02 (0.90)	-0.10 (0.50)	0.04 (0.80)	-0.06 (0.66)
	Branches	0.20 (0.17)	-0.11 (0.46)	-0.10 (0.49)	-0.13 (0.36)	0.10 (0.50)	-0.10 (0.49)	-0.11 (0.47)	-0.01 (0.96)	-0.02 (0.87)	0.01 (0.94)	-0.08 (0.57)

TABLE B: Average BioTAP scores of students who simplify concept maps and those who do not (s.d. in parentheses).

BioTAP	Simplified (<i>n</i> = 24)	Not simplified (<i>n</i> = 25)	<i>p</i> -value
Q1	4.29 (0.81)	4.24 (0.97)	0.84
Q2	4.63 (0.58)	4.44 (0.71)	0.32
Q3	4.80 (0.51)	4.80 (0.50)	0.95
Q4	4.75 (0.53)	4.36 (0.99)	0.10
Q5	4.46 (0.72)	4.36 (0.81)	0.66
Q6	4.42 (0.93)	4.52 (0.71)	0.66
Q7	4.79 (0.41)	4.56 (0.77)	0.20
Q8	3.50 (1.79)	3.36 (1.80)	0.79
Q9	3.67 (1.13)	3.84 (0.85)	0.55
Q1 – Q5	22.92 (1.64)	22.20 (2.06)	0.19
Q6 – Q9	16.38 (2.22)	16.28 (2.34)	0.88
Q1 – Q9	39.29 (2.77)	38.48 (3.69)	0.39