DIAGRAMMING AND GESTURING DURING MATHEMATIZING

<u>Pa Ma</u>, Nahishir

SiffaeUiySiffaeUiy

This paper focuses on the role of diagramming and gesturing in the process of mathematical and explicitly on the role of gestures in cogn(tKonta, 2000; & Núñez, 2000; McNeill, 2008; Radford, 2001). Morentage mbodied cognitizatongside that of new materialism, gestager has r doing and thinking mathematicasilly & Longo, 2011; Barany & s & Sinclair, 2013; Greiffenhageth,4210/enz, 2015; Roth & Maheux The innovative work of the philosopher of the mathatics, Gilles died the historical diagrams of mathematicians, highlights the ingand diagramming inability in the dijTJ dijTJ digting

dagnahta pada dasokaalaki As Rabad Malakipo , "a						
ial a	atbægs btiktlutgige)15, p236) .		
METHODOLOGY						
The edb j	s itsly jene Ca a a	n eh		ahiasib		
i 6Th	GaþTþóttpNbAen			an ia	, ad ae	
EL .	fina ondeded sty (Mor 2015)	n diagignad ig dig				
a big	Theatains	, 🖻 tasF	el, Chad Vio	ŧn	icia n	
sea pil filletsaa	to tsl	y blas62	-lardel gepad tijbed n			
d ése	. The hydrasten		a lato ia lije pen			
ping algebrase as the set of the						
ad to $a_{3}=0$ ($3_{3}=0$)($3_{3}=0$)($a_{4}=0$)($a_{3}=0$)($a_{4}=0$)($a_{$						

,

Fig	1: E js ej	asad tapité		- b fa da g m		
Inadas o	-ad episodesilsea phrifindbadagnad					
abaian Tamepisod	е	sbeu	si a llet b h a	jë fitend a isle	-	
şbidd. Thankstatidde				-lyfa dagnfisaito		
iste bisnibie ja ekedisd	agr je em	erging			, presenț	
unsupportive disruptive supportive pulling, central, discarded, obliterated absento established						
(eFigil). In this population	øsaedød b	diagram			-is-emerging	
ad diagram -is-	-disrupti	ve Thanjjskandad		ittatMr(2015).		
Example 1: diagrainerging						
Egiza aibianaisiakaisa	tebalsond ta	ita enig a diagm				
g nTkdagnanis6akb	gnTkdagnanisfakjbesja Øktebbere b					
daig. Oelda gigalada resta avyfleda gu lejse						
diagramis-em	ergingisid	el ad bijdediagram		-is-presentbig Ifa aibian		
addstorasfibig		a ldagm	be babdagnis i d		. Fø	
ig aedie	b	p edagm	-is-ignabot(1) tahi an		
dagsfatdijship bipljabledigaid h						
da ggayb a		sin abig 3, 5 ad 9;	; (2) babi anaddst	00		
estarig dagn tuitig ld	agm(3) ta	hiare			-9	
a dagam byta	gbdgad i	e6anigdagn(ulya gh, v	N		h	
a 125 Ty(a)4(n)4	() -10() -W	V4 -0.004 Tc0.18 T	w11.77 -1.334d	[(1.3. Td T184)-2() -110)())TJ -(a)6(g()ahnd2.954(

Т

W

Menz, Sinclair

C_{6}^{2}									
dig closed walks Fis Fel dastal pare dd dd da dd									
d y									
a ank									
hd (eFig2d) , beheverbehernbedagnasfihld is									
it fifte Difititut, istants									
mø h iksad iddeligpad dadaat haeinighhd									
offictive Bhikacing asktholyb									
ahibhadghad hyilyahichachthdagm									
kis butaga kadatata Berkana kaka ng kata Ang Gilighafa dina dina butaka sa ka									
dagm ad									

e

d

1 - 4

Menz, Sinclair

sigad stiedagadasid Fig2f is ad laddshad kijimila talen elefikdagalikideërdiji bihad Fel is alikalidik	l klavasciloed i(2) fidiagem sl sak(eFig2f lg	fti(eFig2). A fads	C	-is-iegn Chanadelan kav			
Digal isinh ishgh ainia . Vindigistri	eti ahmin Vipist oh oxopp Athyd, Viciaki byChishte ad dish	. Høvhdag	am is iej b	yhhtev ; thev			
The dags in Fig.2 date helgs in the lands high The dags in Fig.2 date helgs in the lands high a hein B y dags in global so the lands high a de a hein B y dags in global so the lands high a de b dags b yC had Fel bends, has a so for The lands a de falsa digst b he he did gent so the lands g2c falsa digst b he he did in the lands in the lands b yeight in the lands falsa digst b he he did in the lands i							
Is Is <td< td=""></td<>							
Example 2: diagraissdisruptive							
Teipia dipdagnishti Urbitht Nglenhian Isastad filfitestenhia Nglpad fel Ngl	tadagam . Stipi	ark , bide spiljbäjäppineknin	∯el D	idi si ta			
Int bigap n haldifasterind acits		d ip dagm	t h nhin ae h h				
beldigaringhad angefa grad tv4- grad for angely wight be nigelig daturelig (eFig3)	ly Fel islay Island, naigelg(eFig3a	athebholsond ad anged	il kapabur Abbakood, kaipat),			
tid agritsFigs	c), ad boish), pga anyil	kin , bilitetete				
hofolistand a to Th	€), uu ≞ giu	data tatad	agnaktanbian				
a Ekdagiphisa sa ja dija			do, bianple6dag	m -is -			

References

- BalyF., & LgG. (2011). Mathematics and the natural sciences: The physical singularity of life EdgNJ: IpiClPsRit Jj24, 2015, fp//sbayon
- Bang M., & Makie D. (2014). Chik Matekad pinahiseb InC. Cpm J. Vie M. Lip & S. Wight (Eds), Representation in Scientific Practice Revisited 107-130). Cabridg MA: TeMIT Ps
- ChaG. (2000). Figuring space: Philosophy, mathematics and phyenceshe M. Zah, Tan). Doh The Nhods Kha Adder bh (Oglikhi 1993)
- deFits E., & Shir N. (2012). Diagning and Theoditich Instead and Educational Studies in Mathematics , 80(1), 133-152.

abis

deFits E., & Shir N. (DQUBGEOGRAPHICE2(6(486(097.6G84(D)1019())Ej2(3)2.));6(a));929(13),141a,MC.8(15:)400(9.110)-2.11 p11(a)-