The Role of Discourse in Inclusive and Equitable Mathematics Learning and Teaching

C , T b , M.Ed.

Introduction

Discourse is a fundamental aspect of learning and understanding mathematics at all grade levels and for all students. According to the National Council of Teachers of Mathematics (NCTM), "Effective mathematics teaching engages students in discourse to advance the mathematical learning of the whole class. Mathematical discourse includes the purposeful exchange of ideas through classroom discussion, as well as through other forms of verbal, visual, and written communication" (NCTM, 2014, p. 29).

This paper explores the what, why, and how of math discourse, emphasizing its crucial role in fostering deep understanding, enhancing argumentative skills, and promoting a culture of curiosity and active learning.

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Ta C

T I a Ma a a D

Whe . de . ar c a e . d . c ▂ r . e, he ar c a e he r h ▂ gh r ▂ ce . e , cha e ge he r a . ▂ . , a d b d ▂ . each ▂ he r . dea . Th . er ac e a r ▂ ach . ▂ ▂ . dee e . he r . de r a d . g ▂ f a he a ca c ▂ . ce . b a . ▂ de e ▂ . c r ca h . g a d c ▂ . ca ▂ . . .

A a a a . I . ead ▂ f a . e rece g . f ▂ r a ▂ . fr ▂ he eache r , de . ac e e gage . he ear . g r ▂ ce . b . har g he r dea , e . ▂ . g a . ▂ . , a d e ▂ r . g d ere . er . ec e . . Th . . de -ce . ered a r ▂ ach r ▂ ▂ e . dee er . de r . a d . g a d f ▂ . er . a . e . e ▂ f ▂ . er . h a d age c . ear . g. Whe . de . . ee he r dea a ed a d d . c . . ed, he ar e ▂ re e ▂ a e r . . , a . e . ▂ . , a d . ee ▂ . e ear . g ▂ ▂ r . e .

T , a a a a a a a a a a a a . F ▂ r e a e, he r a (▂ r agTh r e)3 .2(. d cr ▂ b e .)]TJ T[((a

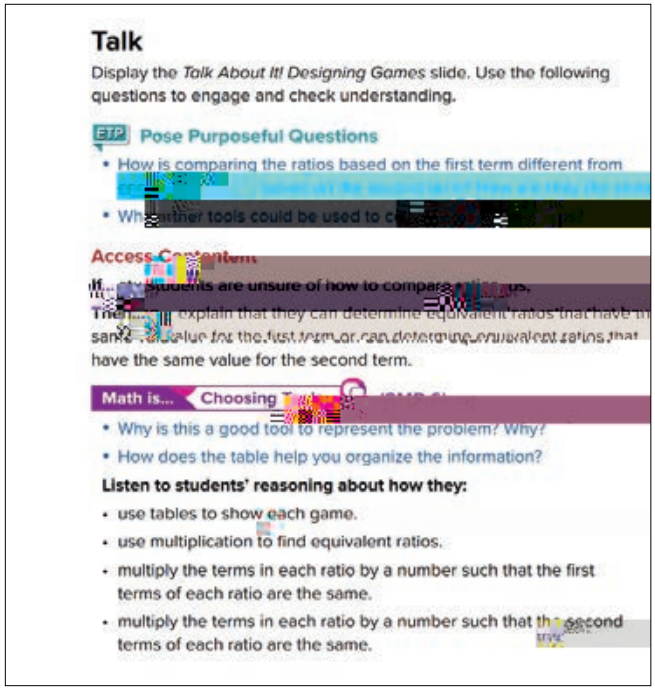
C 2023 Ca a Ma F a : SMP

The S a dard f r Ma he a ca Prac ce (SMP) e bed he hab f d a d hab f erac ha f r he ba f a h ear g f r e a e, rea g, er e er g r b e g, a d e a g e' h g. T each a he a c f r der a d g, e e a ac e a d e a c a e de ' e f he SMP .

Ma he a c f r A : P r e, U der a d g, a d C ec , . 23

The SMP c a e cr ca - h g, r b e - g, a d c ca . ha are f da e a f r der a d g a d a g a he a c e ec e (Na a G er r. A c a Ce er f r Be Prac ce a d C c f Ch ef S a e Sch O f cer , 2010). Ma he a ca d c r e a erf ha r. he de e e f. he SMP . I e c rage de ar c a e her r b e - g a r ache , d c ar . ra eg e , a d re ec her h g, hereb he g he er e ereb r d g r a d a er a e er ec e .

D c r e fac a e he e cha ge f dea ab he rea . h be ee a e a d her ab rac re re e a . , a g de e a her rea g a d der a d her e a a . . I a a ra e de re e g her arg e , f g her rea g, a d e gag g cr ca d c . . , h ch de e her ab c r c g ca arg e a d e a a e eer rea g. D c r r e d c . . h re re e rea - r d a . a he a ca , he g de re e her ab crea e a d e a he a ca de . C er a . ab e ec g a d g a he a ca e ec e e c rage de . ha re her e er e ce a d ear ch e he a r ra e f r ec c a .



E a e f r *California eveal Math*® Grade 6 Teacher Ed .

C 2023 Ca a Ma F a : C a N

E ab h g c a r a d r e ca r de a e d g a d a g e e f he r eer ' a he a ca dea a d e a ha e a her'.

Pr d g r e f r de a ear a d fe ab he r a h dea cr ca f r de e g der a d g a d er h f her ear g. B e c rag g de h re her h gh fr he beg g f he e , eacher ca crea e a e r e here e er ce a ed a d a he a ca rea g c e red. Ear d c ca be e ed a f r gh draf h g a de hare a d d c her a , hed dea h ch are a er re ed hr gh eer feedbac a d c ab ra e re (Ja e , 2023). Fre e r e f r d c r e hr gh he e he de re e her dea , car f der a d g , a d dee e her c ce a der a d g.

T c a e a e gag g a d e ec e a he a ca d c r e e r e , ed ca r ca e e e rac ce f r g de re e h r c red ech e e a h a e a d r e eer d c r e .

P a - a

S h a d S e (2011) ed e e rac ce f r e ec e g de re e h e-ca d c :

1. A c a e e a de re e bef re he e beg .
2. Ac e r de r a d e gage e d r g he e .
3. Se ec ec c de re e her a he a ca r .
4. S ra eg ca e e ce he re e f r he d c .
5. Ma e c ec be ee d ere de re e a d he ere e e a he a ca c ce .

The e rac ce r eacher f er g r ch a he a ca d c r e b e c rag g dee er de e gage e a d der a d g. B a c a g re e, eacher ca be er re are f r d er e er ec e, h e r g a he ga ge c rehe rea e. Se ec g a d e e c g re e a e de c r b b a crea e a c he e arra e d c , a e he g de a e c ec e a he a ca dea . Th r c red a r ach e er ed ca r fac a e r d c e c er a ha e ha ce ear g c e a d r e a c ab ra e ca r c re.

Fa a

The e f r c red ech e cha a h a e (Cha e a , 2022) r he r ce f har g a d re g dea . Ma h a e refer ec c ra eg e r ech e fac a e ea gf a he a ca d c r e ed b b h he eacher a d de . Here are e c a h a e :

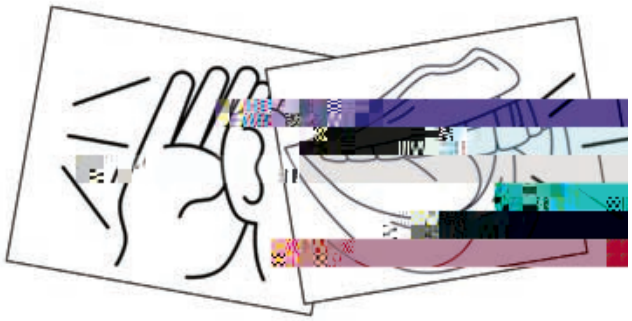
R ca beg h, S , re a g ha ...?" r "Le e ee f l der a d. Y h ha ...?" Th e c r he de dea a d ca r her e gage h re dee .

R a ▁f e beg h, "Ca ▁ a ha aga ?" ▁r "Wha d d [a ▁ her de] a ?" Th ▁ e he e re ha a de ha e heard a d der ▁▁d he e dea be g d c ed.

P ▁f e beg h, "Ca ▁ e a h ...?" ▁r "Wha a e ▁ h ha ...?" Th a r▁ach he de ar c a e her h▁ gh r▁ce e a d e a e her dea ▁re cr ca , f▁ er g dee er e gage e h he a he a ca c▁ ce be g d c ed.

P ▁f e beg h hra e e, "Wha d▁ ▁ ▁ ce ab▁ ...?" ▁r "H▁ c▁ d ▁ g re▁ ...?" Th ech e he de f▁c her h g a d e ▁re a he a ca dea ▁re e ec e .

C ▁f e beg h r▁ e, "H▁ h ar ▁...?" ▁r "Ca ▁ h ▁f a ▁ her a ▁re re e ...?" The e e ▁ he de a e c▁ ec ▁ be ee d ere a he a ca dea , re re e a ▁ , ▁r ra eg e .



Ta & L e Card
(Kee e & T▁be , 2017)

P a

Peer d c ▁ r▁ de de h a a f▁r ▁ hare her dea , cha e ge each ▁ her h g, a d b d▁ her c▁ ec e ▁ edge. E e he ▁ ge ear er ca e gage eer d c ▁ , be e g fr▁ he▁ ▁r ▁ ar c a e her h▁ gh a d hear d er e er ec e . The e▁f r c red r▁ e ▁r eer erac ▁ . F▁r e a e, T r a d Ta g Ta & L e Card (Kee e & T▁be , 2017) ca ▁r K dergar e c▁ er a ▁ , a h ca h▁ d g a d a g he card r▁ de a a g b e re der▁f he r▁ e a d e ec a ▁ d r g he d c ▁ . The e r▁ e e re ha each de ha a cha ce ▁ ea a d e , f▁ er g e ab e ar c a ▁ a d e ha c g he a ▁f her a he a ca d c▁ r e.

C 2023 Ca a Ma F a : P R

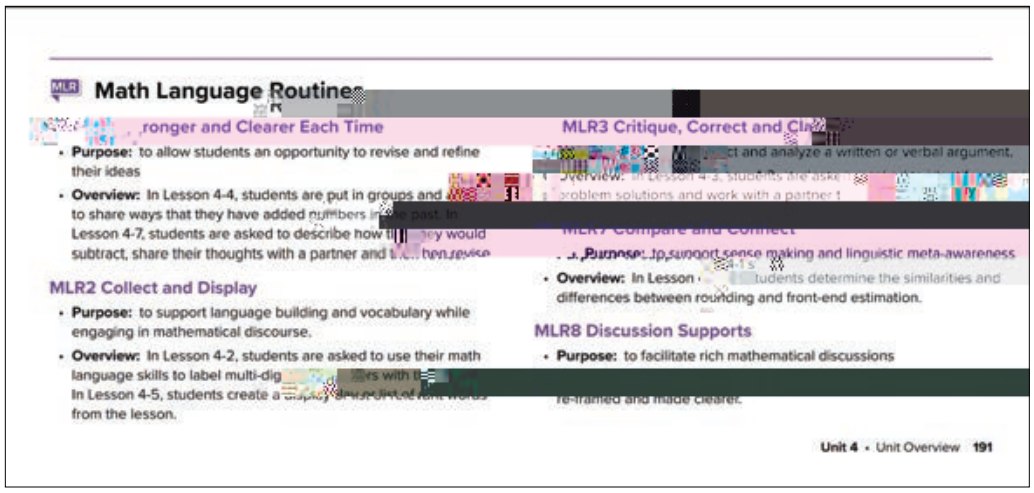
Peer re ▁ c g a ▁ erf r▁ e f▁r r▁ ▁ g hared der a d g▁f a he a c a e 627.1201 T

La a O A

I c r ra g a g age b ec e he e re ha a g age de e e egra ed h c e ear g. B e g c ear a g age g a a d e c each g he a g age. r c re a d cab ar eeded f r a he a ca d c r e, eacher ca he de bec e re r ce c ca r. Th e a f c a g age r. E g h ear er a d de fr d er e g c bac gr d a d be e a de b r g c ar a d rec a he a ca d c .

S R

Ma he a ca a g age r e (MLR) are r c red f r a ha he de de e her a he a ca a g age, c e , a d rac ce . MLR r d c r e b a d g de a g e e f a h a d e ha c g her der a d g f a g age, , a d a he a ca c ce . B a f g a g age, de ca ac re re h ca ed er a d c ce . MLR a r e re b he g de ar c a e her h gh rec ear he r g a d ea g ab a h. Add a , he e r e c a e c er a , e c rag g r ch era c ha edge ga , e e a e , a d fac a e c ec e c rrec (Z er e a , 2017).



E a e fr *California eveal Math*® Grade 4 Teacher Ed .

C 2023 Ca a Ma F a : I a La a D

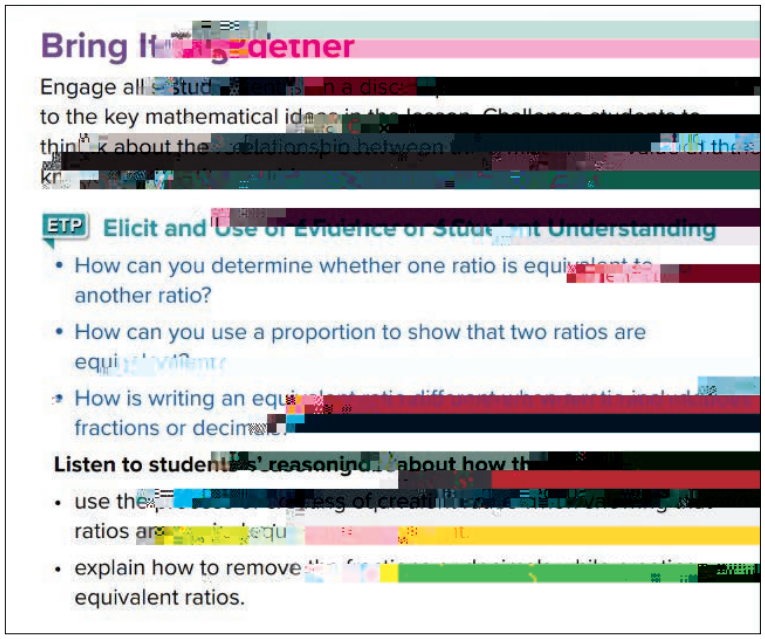
The fac a f h gh- a d c r e eed be e a , e ec a h regard a g age de e e .

E r g, D c er g, a d Rea g W h a d Ab Ma he a c , . 19 20

The Ma h La g age R e , de e ed b U der a d g La g age a he S a f rd Ce er f r A e e , Lear g, a d E , r de eacher h a e f r b r e f er de ar c a h e a e b d g a h a g age, rac ce , a d c e .

E r g, D c er g, a d Rea g W h a d Ab Ma he a c , . 49

D a F a A



E a e fr *California eveal Math*® Grade 7 Teacher Ed .

C

Ma he a ca d c r e a erf f r e ha c g de ear g a d e gage e a he a c . B f er g a ca r c re ha a e c ca , c ab ra , a d cr ca h g, eacher ca he de de e a dee er a d re c rehe e der a d g f a he a ca c ce . Thr gh e a a g a d he e f e ec e r c a ra eg e , eacher ca r e ea gf d c r e ha ce er de h g, r a g age de e e , a d e c rage he c r c f a he a ca arg e . B r r g a he a ca d c r e, ed ca r ca crea e a d a c a d c e ear g e r e ha r e c r , ac e ear g, a d a fe g e f a he a c .

R

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T ear re ab r r gra , :
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