New York State Regents Examination in Global History

2015 Technical Report

3UHSDUHG IRU WKH 1HZ <RUN 6WDWH 'HSDUWPHQW

E\

'DWD 5HFRJQLWLRQ &RUSRUDWLRQ

$SULO

Contents

CHAPTER 1 INTRODUCTION 1

1.1

Chapter 1: Introduction

,QWURGXFWLRQ

7KLV WHFKQLFDO UHSRUW VXPPDUL]HV ([DPLQDWLRQ LQ *OREDO +LVWL
<RUN ZLWK GRFXPHQWDWLRQ RQ WKH SXUSRVH RI WKH 5HJHQ
ERWK UHOLDELOLW\ DQG YDOLGLW\ RI WKH H[DPV VFDOLQJ
LQIRUPDWLRQ IRU WKH $XJXVW -DQXDU\ DQG -XQH
UHVXOWV IRU WKH -XQH DGPLQLVWUDWLRQ 5HVXOWV IRU WK
$SSHQGLFHV % &DQG&G DUG WKH (GXFDWLRQG DQFXVWHFKQRORJL

³7KH REMHFWLYH RI WKH GRFXPHQWDWLRQ LV WR SURYLGH
WKH ðDQf HUUXF

7LWDQGpÀR>DWRVW8`7W@$QL0@@Qf50@@ WASN !a!" ë€` †`&€D ë

7DEOH &RQVWUXFWHG 5HVSRQVH ,WHP $QDO\VLV 6XPPDU\

2EVHUYDWLRQV DQG ,QWHUSUHWDWLRQV

7KH YDOXHV IRU WKH 0& LWHPV UDQJHG IURP DERXW WR YDOXHV IRU WKH &5 LWHPV 7DEOH UDQJHG IURP DERXW LOOXVWUDWHG LQ WKH SORW D ZLGH UDQJH RI LWHP GLIILFGHYHORSPHQW JRDO

Chapter 3: IRT Calibrations, Equating, and Scaling (Standards 2, and 4.10)

7KH LWHP UHVSRQVH WKHRU\ ,57 PRGHO XVHG IRU WKH 5HJ
WKH ZRUN RI *HRUJ 5DVFK 5DVFKD OQJ7WKH5QGLQJPRGHOQE
WHVWLQJ SURJUDPV ,57 KDV VHYHUDO DGYDQWDJHV RYHU F
SURFHGXUH IRU DQDO\]LQJ LWHP UHVSRQVH GDWD LQ ODUJH
DQG +DPEOHWRQ [3] 7KH FHQWUDO IHDWXUH RI ,57 LV WK

6RIWZDUH DQG (VWLPDWLRQ $OJRULWKP

,WHP FDOLEUDWLRQ ZDV LPSOHPHQWHG YLD WKH :,167(36
ZKLFK HPSOR\V XQFRQGLWLRQDO 8&21 MRLQW PD[LPX

&KDUDFWHULVWLFV RI WKH 7HVWLQJ 3RSXODWLRQ

7KH GDWD DQDO\VHV UHSRUWHG KHUH DUH EDVHG RQ DOO V
+LVWRU\ LQ -XQH 7KH FKDUDFWHULVWLFV RI WKLV SRSX

,WHP 'LIILFXOW\ 6WXGHQW 3HUIRUPDQFH 0DSV

)LJXUH 6FUHHQ 3ORWV 5HJHQWV ([DPLQDWLRQ LQ

Local Independence

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0 H D Q	
6 '	
0 L Q L P X P	
3	
3	
3	
3	
3	
0 D [L P X P	

Chapter 4: Reliability (Standard 2)

7HVW UHOLDELOLW\ LV D PHDVXUH RI WKH LQWHUQDOO\ FRQVLVWHQW WKH H[WHQW WR ZKLFK WKH LWHPV RQ D WHVW SURYLGH FRQ

SUDFWLFH LW LV FOHDU WKDW ODUJHU FRHIILFLHQWV DUH F
OHVV LQIOXHQFHG E\ UDQGRP HUURU

IDFWRU RI WKH 6(0 $V DQ H[DPSOH VWXGHQWV ZLWK D JLYH
EHWZHHQ í 6(0 DERXW WZR XQLWV 6(0 FRQWKHHQ EHLQWHUYD
DERXW SHUFHQW

7KH FRHIILFLHQWV RI SDUWLDO DQG 6(0 IRU WKH 5HJHQWV ([DPLQDWL
LQ DEOH

7DEOH 5HOLDELOLWLHV DQG 6WDQGDUG (UURUV RI 0HDVXU
+LVWRU\

	&RHIIL	
6XEMHF	$OSK	*SEM*
*OREDO +L		

$VVXPLQJ QRUPDOO\ GLVWULEXWHG VFRUHV RQH ZRXOG H[S
ZLWQKRQWDQGDUG GHYLDWLRQ WKH PH$Q HVWLPDWH RI WKH VWDQGDUG G
EH FRPSXWHG DV

$$_7 \sqrt{\quad [\quad [\quad [$$

Condg0 0.36458 2460570048>4 E PE d Q p P € CF64PF@ V% drd Error of464>4 M5625.ea5625.su.1

LWHPV)RU WHVWV VXFK DV WKH 5HJHQWV (VWLPDWLRQ
EHWZHHQ DQG VFDOH VFRUHV WKH &6(0 IRU HDFK DFKLHYDE
WKH FRPSRXQG PXOWLQRPLDO GLVWULEXWLRQ WR UHSUHVH
OHYHO RI

&RQVLGHU DQ H[DPLQHH ZLWK D FHUWDLQ SHUIRUPDQFH OHY
SHUIRUPDQFH SHUIHFWO\ ZLWKRXW DQ\ HUURU WKLV PHDVX
GLVFXVVHG HDUOLHU 7KLV VFRUH LV HTXDO WR WKH H[SHFW
D WHVW WKHLU REVHUYHG WHVW VFRUH DOZD\V LQFOXGHV V
LV SRVLWLYH DQG WKH H[DPLQHH DFKLHYHV D KLJKHU VFRU
RWKHU WLPHV LW LV QHJDWLYH DQG WKH H[DPLQHH DFKLHY
@R0RUP1KHHKHdWRHG, UD VR€`pR,U REVH HG WHVW HGHUGP R H

Results and Observations

7KH UHODWLRQVKLS EHWZHHQ UDZ DQG VFDOH VFRUHV IRU W
VFDOH VFRUHV RI WR DQG WKHQ FRQFDYH GRZQ IURP DE
WUDFN OLQHDUO\ ZLWK WKH UDZ VFRUHV IRU WKH TXDUWHU
UHODWLYH WR WKH UDZ VFRUHV IRU WKH UHPDLQLQJ WKUHH
YDULDWLRQV 7KH &6(0V IRU WKH 5HJHQWV ([DPV FDQ EH H[S

P0P G W0p0lR5HJ

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		/(9(/ ,	/(9(/ ,,	0$5*,1$/
7(9) 7 : 2	/(9(/ ,	M	M	M ”
	/(9(/ ,,	M	M	M ”
	0$5*,1$/	M’	M’	

6 W D W I
& R Q V L V
$ F F X U I

×qP„a É qP„a •Aw F A5w F bmw F ±÷t 0
t ½ t ; $ ´ ² É [A ñgbAT » t » qåSf a É a •A`qP& A5`qP& bm`qP& ±÷Y 0
Y ½ Y ; $ Y ² É U‘ ‘ Y » qåSdW a É W a •AEqP& A5EqP& bmEqP& ±÷D 0
D ½ D ; $ D ² É TA ñaD D » qåSc a É a •A0qP& A50qP& bm0qP& ±÷) 0
) ½) ; $) ² É R‘ ‘) » qåSaW a É W a •A qP& A5 qP& bm qP& ±÷ 0
½ ; $ ² É QA ña » qåS` a É a •A qP& A5 qP& bm qP& ±÷Y‘
Y‘ Ñ @±õ™ ; $ Y‘ !ñ • Y‘ ñaY‘ ñ±õ™ » qåSXW a É …qP& É …qP& A5XW a @ &Õ…qP& ±÷X
XA Ñ @±õ„ ; $ XA !ñ • XA ñaXA ñ±õ„ » qåSW a É pqP& É pqP& A5W a @ &ÕpqP& ±÷V‘
V‘ Ñ @±õi ; $ V‘ !ñ • V‘ ñaV‘ ñ±õi » qåSUW a É UqP& É UqP& A5UW a @ &ÕUqP& ±÷UA
UA Ñ @±õT ; $ UA !ñ • UA ñaUA ñ±õT » qåST a É @qP& É @qP& A5T a @ &Õ@qP& ±÷S‘
S‘ Ñ @±õ9 ; $ S‘ !ñ • S‘ ñaS‘ ñ±õ9 » qåSRQ‘P¶ •ARQ‘P¶ É % a $ U% a @ &Õ% a Ë u$ S
RA5½ RA5; $ RA5² É U$ S ñaRA51 RA5» qåSQ ‘Pa É É A5Q ‘Pa @ &Õ ±÷RCS
RC[Ñ @±õ$5; $ RC[!ñ • RCS ñaRCS ñ±õ$5» qåSIQ‘Pa É • É • A5IQ‘Pa @ &Ô• ±÷IA50
IA5½ IA5; $ IA5² É T” S ñaIA51 IA5» qåSH ‘Pa É € É € A5H ‘Pa @ &Ô€ ±÷GCS
qåSFQ‘Pa É e É e AY e 1 e e 1 ±÷F9“ @³4D5 @ •ADCQP AY D5 1 ñ e D5 1 ñåSDƒ‘QV
a À Dƒ›Ö q³4H9 a Ë &&ÔH90
a g A5Dƒ‘QV A5Dƒ‘QV B1Dƒ‘QV C‘ÔH9;QV Dƒ‘QV qDƒ•pa e H9 1a åSC3‘Pa É 39 É 39 A5C3
r @ 2g½r @±ô2g;r @bAT2g²×" É T2g=r @g U4 9 •AAƒ‘Pa •AAƒ‘Pa $ T 9 ±÷Avs
r @ g½r @±ô g;r @bAT g²×" É T g=r @g U4 9 •A@3‘Pa •A@3‘Pa $ T 9 ±÷@&s
r @ g½r @±ô g;r @bAT g²×" É T g=r @g U3ˆ9 •A8ƒ‘Pa •A8ƒ‘Pa $ Sˆ9 ±÷8vs
r @ ‡g½r @±ó‡g;r @bAS‡g²×" É S‡g=r @g U3s9 •A73‘Pa •A73‘Pa $ Ss9 ±÷7&s
r @ rg½r @±órg;r @bASrg²×" É Srg=r @g U3X7 a É X7 a •A5ƒqP¶ A55ƒqP¶ ±÷1e0
r @ [×" 1e;r @bAS [-r @l• 1e=r @g U3C7 •A43qPa •A43qPa $ SC7 ±÷4&S
r @ Be½r @±óBe;r @bASBe²×" É SBe=r @g U3(7 •A2ƒqPa •A2ƒqPa $ S(7 ±÷2 S
r @ !e½r @±ó!e;r @bAS!e²×" É S!e=r @g U3 7 •A13qPa •A13qPa $ S 7 ±÷1&S
r @ e½r @±ó e;r @bAS e²×" É S e=r @g U2˜7 •A)ƒqPa •A)ƒqPa $ R˜7 ±÷)qs " U2•i a åS(‘QV r•
a À ƒ(‘QV 2•iå V •A(&QPr @ •i a &&Ò•i0
d ñ i d ñ QV@o (‘ g U3X7 c
a À 1"\ 1"\ 1×" Cg QåS5ƒqP¶0
a À a a5"%À "Q5"%À r @±ô6qU ƒqPìn4cã
a À a‘P¶ia •À a % •b"\ 1×" Cg Qá((7 c
a À a‘P¶a ‘"%À !9 "\ 1×" Cg Qâ 7 ÆãF>0
a À a‘P¶aa "%À "\ 1×" Cg Qâ€…ƒqP¶0
a À a‘P¶ C "\ Q5 "%À r @±ô6qU 2 7 ÆãF>0
a À a‘P¶ hF "\ h2 "\ 1×" Cg Qã‡ƒqP¶0
a À a‘P¶A–„a5 a h1% Qb"\ 1×" Cg Qä#ƒqPìn4cã
a À a‘P¶0

&RQWHQW YDOLGLW\ LV QHFHVVDULO\ FRQFHUQHG ZLWK WKH
WKH WHVW SURYLGHV DQ DFFXUDWH PHDVXUH RI H[DPLQHH S
EOXHSULQW IRU WKH 5HJHQWV ([DPLQDWLRQ LQ *OREDO +LV
FRQVWUXFWLQJ WKH H[DP ,W SURYLGHV H[SOLFLW GHILQLWL
WKH H[DP 7KH WHVW GHYHORSPHQW SURFHVV GLVFXVVHG
H[WHQW SRVVLEOH WKDW WKH EOXHSULQW LV PHW LQ DOO R

7DEOH GLVSOD\V WKH LWHP W\SHV XVHG WR DVVHVV HDFK

7DEOH 7HVW %OXHSULQW 5HJHQWV ([DPLQDWLRQ LQ *ORE

,WHP 7\SH	6WDQGDUGV
0XOWLSOH &KRL	6HH 6SHFLILFDWLRQV *
7KHPDWLF HVVD	:RUOG +LVWRU\
	*HRJUDSK\
'RFXPHQWEDVHG TXHVW	&LYLF&LWL]HQVKLSHUQPH

6HH SDJHV IRU KLWWS OHZZHG GHQWDO RY DVVHVVPHQW VV

7HVW GHYHORSPHQW IRU WKH 5HJHQWV ([DPLQDWLRQ LQ *OREDO +LVWRU\
GHYHORSPHQW DQG UHYLHZ F\FOHV $Q LPSRUWDQW HOHPHQ
GHYHORSHG E\ 1HZ <RUN 6WDWH HGXFDWRUV LQ D SURFHVV
H[SHUWV %ULQJLQJ H[SHULHQFHG FODVVURRP WHDFKHUV LQ
GUDZ D VWURQJ FRQQHFWLRQ EHWZHHQ FODVVURRP DQG WH

2QO\ 1HZ <RUN 6WDWH±FHUWLILHG HGXFDWRUV 1HZ <RUN 6WDWH
'HSDUWPHQW RI (GXFDWLRQ DVNV IRU QRPLQDWLRQV IURP G
RI SDUWLFLSDQWV LQ PLQG LQFOXGLQJ GLYHUVLW\ LQ JHQG
H[SHULHQFH (GXFDWRUV ZLWK LWHP ZULWLQJ VNLOOV IURP
WKH 5HJHQWV ([DPLQDWLRQ LQ *OREDO +LVWRU\ XQGHU VWU
$SSHQGL[$ 6WDWH HGXFDWRUV DOVR FRQGXFW DOO LWHP
LV DSSURSULDWH WR WKH FRQVWUXFW EHLQJ PHDVXUHG DQ
GHILQHG VWDQGDUGV WHVW EOXHSULQW WDUJHWV DQG VW
VHOHFW WKH KLJKHVW TXDOLW\ LWHPV IRU XVH LQ WKH RSH

)LJXUH 1HZ <RUN 6WDWH (GXFDWLRQ 'HSDUWPHQW 7H

7KH LWHP UHYLHZ SURFHVV KHOSV WR HQVXUH WKH FRQVLV
DVVHVV WKH TXDOLW\ RI WKH LWHPV GHYHORSHG DQG LGHQ
RI LWHPV WR EH LQFOXGHG LQ WHVWV DQG KLJK TXDOLW\ LWHPV WH
PDQQHU WKDW LV FRQVLVWHQW ZLWK WKH WHVW EOXHSULQW
WR DVVLVW LQ D FRQVLVWHQW LQWHUSUHWDWLRQ RI WKH VW
FULWLFDO VWHS LQ LWHP GHYHORSPHQW EHFDXVH FRQVLVW
DVNLQJ H[DPLQHHV LV D IXQGDPHQWDO IORP RI HYLGHQFH R
LQWHUSUHWDWLRQ RI WKLV LWHP UHYL
RU ³UXEULFV ´ IRU WKH LWHP DQG E
UHVSRQGLQJ WR HDFK LWHP (DFK RI
IDLUQHVV IRU DOO VWXGHQWV DQG
YDOLGLW\ RI WKHLU LQWHUSUHWDWLRQV

6SHFLILFDOO\ WKH LWHP UHYLHZ SURFHVV DUWLFXODWHV W
6WDWH (GXFDWLRQ 'HSDUWPHQW ORRNV IRU LQ GHYHORSLQJ

- ODQJXDJH DQG JUDSKLFDO DSSURSULDWHQHVV
- VHQVLWLYLW\ ELDV
- ILGHOLW\ RI PHDVXUHPHQW WR VWDQGDUGV

4. FRQIRUPLW\ WR WKH H[SHFWDWLRQV IRU WKH VSHFLILF L

(DFK VHFWLRQ RI WKH FULWHULD LQFOXGHV SHUWLQHQW TXI
DQ LWHP LV RI VXIILFLHQW TXDOLW\ :LWKLQ WKH ILUVW WZR
XVHG WR KHOS HQVXUH WKDW VWXGHQWV XQGHUVWDQG ZKDW
TXHVWLRQ GRHV QRW DGYHUVHO\ DIIHFW D VWXGHQW¶V DELO
VHQVLWLYLW\ ELDV FULWHULD DUH XVHG WR HYDOXDWH ZKH
GLVDGYDQWDJHRXV WR DQ\ JLYHQ VXEJURXS V

7KH WKLUG FDWHJRU\ RI LWHP UHYLHZ DOLJQPHQW DGGUHV
7KLV FDWHJRU\ DVNV WKH UHYLHZHU WR FRPPHQW RQ NH\ DV
VNLOOV GHPDQGHG E\ WKH VWDQGDUGV

7KH IRXUWK FDWHJRU\ DGGUHVVHV WKH VSHFLILF GHPDQGV
HYDOXDWH HDFK LWHP WR HQVXUH WKDW LW FRQIRUPV WR W
LWHPV PXVW KDYH DPRQJ RWKHU FKDUDFWHULVWLFV
EXW LQFRUUHFW DQVZHU FKRLFHV)OOORZLQJ WKHVH UHYLH
HGXFDWRU SDQHO PRYH IRUZDUG IRU ILHOG WHVWLQJ

2QJRLQJ DWWHQWLRQ LV DOVR JLYHQ WR WKH UHOHYDQFH R
DVVHVVPHQW &RQVLVWHQW ZLWK D GHVLUH WR DVVHVV WKL
(GXFDWLRQ LV FRPPLWWHG WR RQJRLQJ VWDQGDUGV UHYLHZ
VSHFLILF UHVSRQVHV IURP VWDNHKROGHUV DERXW LQGLYLG

5.2 Evidence Based on Response Processes

7KH VHFRQG VRXUFH RI YDOLGLW\ HYLGHQFH LV EDVHG RQ H
UHTXLUHV HYLGV H H °À VR [DPLQHUHH UHVO €•@ € LYH`0p VW À

$FFRPPRGDWLRQ 3ODQV 3ODQV)XOO WHVW DGPLQLVWU
KWWS ZZZ S Q\VHG JRY DVVHVVPHQW KVJHQ

7KH LPSOHPHQWDWLRQ RI ULJRURXV VFRULQJ SURFHGXUHV C
WHVW VFRULQJ SUDFWLFHV WKHUHIRUH IRFXV RQ SURGXFLQ
VFRUHG YLD ORFDO VFDQQLQJ DW WHVWLQJ FHQWHUV DQG V
7KHUH DUH PDQ\ VWXGLHV WKDW IRFXV RQ YDULRXV HOHPHQ
FRQVWUXFWHG UHVSRQVH LWHPV EXW JHQHUDOO\ DWWHQW
VFRUHV IRU FRQVWUXFWHG UHVSRQVH LWHPV

4XDOLW\ WUDLQLQJ +R\W .HUQV /XPOH\ 0F1DPDU
*RUPDQ 5HQWVFK 6FKOHLFKHU 'D\ %URQVWR
+XIIFXWW -RKQVRQ 3HQQ\ DQG *RUGRQ :HLJ
'HWHFWLRQ DQG FRUUHFWLRQ RI UDWLQJ ELDV 0F4XHHQ
0\IRUG :ROIH %DUNDRXL 3DW] -XQNHU
&RQVLVWHQF\ RU UHOLDELOLW\ RI UDWLQJV &RQJGRQ
1XQJHVWHU 6ZDQVRQ 1DQGDNXPDU 0F4XHHQ &R
0HUR 0RWRZLGOR :HLQURWW -RQHV
5XEULF GHVLJQV WKDW IDFLOLWDWH FRQVLVWHQF\ RI UD
*LWRPHU &URQEDFK /LQQ %UHQQDQ +DHUWHO
-RKQVRQ *RUGRQ 6PLWK /HDFRFN *RQ]DOH]

%LDV DOVR LQFOXGHV SKHQRPHQD VXFK DV WKH KDOR HIIHF
RQH HOHPHQW RI WKH UXEULF HQFRXUDJHV LQDFFXUDWH VF
FDQ EH HIIHFWLYHO\ FRQWUROOHG E\ WUDLQLQJ SUDFWLFHV

7KH WUDLQLQJ SURFHVV IRU RSHUDWLRQDO VFRULQJ E\ VWD
DFWXDO VWXGHQW ZRUN RQ FRQVWUXFWHG UHVSRQVH WHVW
FKDUDFWHULVWLFV W\SLFDO RI H[DPLQHH UHVSRQVHV DV ZH
PDNH 7KLV LQIRUPDWLRQ LV XVHG WR WUDLQ UDWHUV RQ KI
UXEULF DFURVV WKH GRPDLQ RI VWXGHQW UHVSRQVHV

5DWHUV WKHQ UHFHLYH WUDLQLQJ FRQVLVWHQW ZLWK WKH J
DQG DUH DOORZHG WR SUDFWLFH VFRULQJ SULRU WR WKH VV
WKHUH DUH LPSRUWDQW SURFHGXUHV IRU FRUUHFWLQJ LQFR
IRU FRQVWUXFWHG UHVSRQVH LWHPV :KHQ PRQLWRULQJ DQ
FRQVWUXFW LUUHOHYDQW YDULDWLRQ PD\ EH LQWURGXFHG
UHYLHZ WKH FRQVLVWHQF\ RI VFRULQJ IRU WKHLU DVVLJQHG
IRU FRQVXOWDWLRQ WKURXJKRXW WKH VFRULQJ SURFHVV

$WWHQWLRQ WR WKH UXEULF GHVLJQ DOVR IXQGDPHQWDOO\
SURFHVVHV 7KH UXEULF VSHFLILHV ZKDW WKH H[DPLQHH QH
WKH TXHVWLRQ DVNHG 7KH PRUH H[SOLFLW WKHH UXEULF DQ
H[SHFWDWLRQV DUH IRU H[DPLQHHV 7R IDFLOLWDWH WKH GH
WKH 1<6(' WUDLQLQJ IRU ZULWLQJ LWHPV LQFOXGHV VSHFLIL

- 7KH UXEULF VKRXOG FOHDUO\ VSHFLI\ WKH FULWHULD
- 7KH UXEULF VKRXOG EH DOLJQHG WR ZKDW LV DVNHG I NQRZOHGJH RU VNLOO EHLQJ DVVHVVHG
- :KHQHYHU SRVVLEOH WKH UXEULF VKRXOG EH ZULWWH RWKHU OHJLWLPDWH PHWKRGV

,Q VXSSRUW RI WKH JRDO RI YDOLG VFRUH LQWHUSUHWDWLR SURFHGXUHV DUH LPSOHPHQWHG IRU WKH 5HJHQWV ([DPLQDV VHOHFWHG EDVHG RQ H[SHUWLVH LQ WKH H[DP VXEMHFW DQ PRUH WKDQ DSSUR[LPDWHO\ RQH KDOI RI WKH LWHPV RQ WKH HIIHFW RI LQFUHDVLQJ WKH FRQVLVWHQF\ RI VFRULQJ DFURV IRFXV RQ D VXEVHW RI LWHPV ,W DOVR DVVXUHV WKDW QR R RQH VWXGHQW 7KLV SUDFWLFH UHGXFHV WKH HIIHFW RI DQ\ H[DPLQHHV $GGLWLRQDOO\ QR UDWHU LV DOORZHG WR VFR

2QH VWXGLHV WKDW LV XVHIXO IRU HYDOXDWLQJ WKH UHVSRQVH SRLQW ELVHULDO FRUUHODWLRQ RQ WKH GLVWUDFWRUV $ K VWXGHQWV DUH QRW DEOH WR LGHQWLI\ WKH FRUUHFW UHVS
€ JURFUD0P 0p @OO\G • KÀIDP0°€U €p•LDCW° P`0 DE t°P 0`HH U SH H€R
H W WL
P ð€VWXGHQWV DP@LDO P H (Fp`Q Oð QGL

,Q DGGLWLRQ WR PRGHO ILW D VWURQJ DVVXPSWLRQ RI WKH
WHVW LV XQLGLPHQVLRQDO 9LRODWLRQ RI WKLV DVVXPSWLR
RWKHU WKDQ WKH LQWHQGHG FRQWHQW DQG LQGLFDWH WKD
SULQFLSDO FRPSRQHQWV DQDO\VLV RU RWKHU GLPHQVLRQ
UHVXOWV SURYLGH VWURQJ HYLGHQFH WKDW D VLQJOH GLPH
LV H[SODLQLQJ D ODUJH SRUWLRQ RI WKH YDULDQFH LQ VWX
FKDUDFWHUL]H RU H[SODLQ WKH GLPHQVLRQ EXW D UHDVRQ
XQLGLPHQVLRQDO DQG WKDW WKH GLPHQVLRQ PRVW SUHVHQ
GHWDLOV RI WKLV DQDO\VLV

&RQVLGHULQJ WKLV FROOHFWLRQ RI GHWDLOHG DQDO\VHV R
*OREDO +LVWRU\ VWURQJ HYLGHQFH H[LVWV WKDW WKH H[D
DQG UHOLDEOH LQIRUPDWLRQ DERXW H[DPLQHH SHUIRUPDQF

5.4 Evidence Based on Relations to Other Variables

$QRWKHU VRXUFH RI YDOLGLW\ HYLGHQFH LV EDVHG RQ WKH
FRPPRQO\ HQFRPSDVVHV WZR YDOLGLW\ FDWHJRULHV SUHYD
DQG SUHGLFWLYH YDOLGLW\ 7R PDNH FODLPV DERXW WKH Y
SXUSRVHV VXFK DV WKH 5HJHQWV ([DPLQDWLRQ LQ *OREDO
SURYLGLQJ HYLGHQFH WKDW SHUIRUPDQFH RQ WKLV WHVW F
RU VLPLODU FRQVWUXFWV $OWKRXJK QRW DEVROXWH LQ LW
YDOLGLW\ H[LVWV VXFK FRUUHODWLRQV FDQ EH KHOSIXO IR
FRUUHODWLRQ LV KLJK 7R FRQGXFW VXFK VWXGLHV PDWFK
VDPH FRQWHQW DV WKH 5HJHQWV ([DPLQDWLRQ LQ *OREDO +
VXFK GDWD LV FRPSOH[DQG FRVWO\

,PSRUWDQWO\ D VWURQJ FRQQHFWLRQ EHWZHHQ FODVVURR
WKH IDFW WKDW 1HZ <RUN 6WDWH HGXFDWRUV GHHSO\ IDPL
HQDFWPHQW LQ WKH FODVVURRP GHYHORS DOO FRQWHQW I

,Q WHUPV RI SUHGLFWLYH YDOLGLW\ WLPH LV D IXQGDPHQW
VWDQGDUG IRU VXSSRUWLQJ WKH YDOLGLW\ RI SUHGLFWLYH
HYLGHQFH RI WKH UHODWLRQVKLS EHWZHHQ WHVW VFRUHV D
GKH FT HQW PKH@W PKH€ RIpÐ0•…WLR•HY@ WKHFWDQGDU V LP

VXSSRUWHG XVHV 5HJDUGOHVV RI SHUVSHFWLYH RQ WKH QD
LPSRUWDQW WR FDXWLRQ DJDLQVW XVHV WKDW DUH QRW VX
)RU H[DPSOH XVH RI WKLV WHVW WR SUHGLFW H[DPLQHH VF
HLWKHU WKH VWDWHG SXUSRVHV RU E\ WKH GHYHORSPHQW S
EULHI VXUYH\ RI ZHEVLWHV IRU 1HZ <RUN 6WDWH XQLYHUVLW
GHILQHG XVH DV D WHVWLQJ UHTXLUHPHQW WRZDUG JUDGXD
*OREDO +LVWRU\ RI WKH H[DPQO\ XVHG WR LQIRUP DGPLVVLRQV
GHFLVLRQV 6XFK XVHV FDQ EH FRQVLGHUHG UHDVRQDEOH I
5HJHQWV ([DPLQDWLRQ LQ *OREDO +LVWRU\ DUH FRQVLVWHQ
VWXGHQW LV VHHNLQJ HQUROOPHQW RU SODFHPHQW (GXFDW
SXUSRVHV DUH DGYLVHG WR H[DPLQH WKH VFRULQJ UXOHV I
WR DVVHVV WKHLU DSSURSULDWHQHVV IRU WKH LQIHUHQFHV
VWXGH @ Q G`` €P Q 0

References

0F4XHHQ - &RQJGRQ 3 - 0DUFK 5DWHU VHYHULW\
LQYDU3LDDSQHWU" SUHVHQWHG DW WKH $QQXDO 0HHWLQJ RI WKH
$VVRFLDWLRQ &KLFDJR ,/

0HUR 1 3 0RWRZLGOR 6 - (IIHFWV RI UDWHU DFFR
IDYRUDELOLW\ RI SHRUHRQDDQFH$SSOLHG3V\FKRORJ\

0\IRUG & 0 :ROIH (: 0RQLWRULQJ UDWHU SHUIRU
GHWHFWLQJ GLIIHUHQWLDO DF-RXUDF\ DQG (GXFDWLRQDO 0

3DW] 5 - -XQNHU % : -RKQVRQ 0 6 DQG 0DULDQR / 7
IRU 5DWHG 7HVW ,WHPV DQG LWV $SSOLFDWLRQ WR 3H
(GXFDWLRQDO DQG %HKDYLRUDO 6WDWLVWLFV

3HDUVRQ . 0DWKHPDWLFDO &RQWULEXWLRQV WR WKH
DQG 3DQ3KLO0RVRSKLFDO 7UDQVDFWLRQV RI WK+H 5R\DO 6RF

3HFKHRQH 5 / &KXQJ :HL 5 5 3HUIRUPDQFH DVVH
6XPPDU\ RI YDOLGLW\ DQG UHOLDELOLW\ VWXGLHV IRU WKH
8QLYHUVLW\ 3$&7 &RQVRUWLXP

3HQQ\ - -RKQVRQ 5 / *RUGRQ % 8VLQJ UDWLQJ
DQDO\WLF -RXUQDO7RKH([SHULPHQWDO(GXFDWLRQ

6FKOHFKHU ' - 'D\ ' 9 %URQVWRQ 7 0D\HV % 7 5
IUDPHZRUN WUDLQLQJ (QKDQFLQJ WKH-RXUQDO XRI W
$SSOLHG 3V\FKRORJ\

7KLVVHQ ' 3RPPHULFK 0 %LOOHDXG . :LOOLDPV 9 6 /
WHVWV LQFOXGLQJ SRO\WRPRXV3V\FKRORJLFDO0HDV

YDQ GHU /LQGHQ : - +DPEOHWRQ5RN RI(PSRGHUQ LWHP U
1HZ <RUN 1< 6SULQJHU

:DQJ 7 .ROHQ 0 - +DUULV ' - 3V\FKRPHWULF SU
SHUIRUPDQFH OHYHOV IRU SHUIRUPDQFRXDQVDOVVHVVPHQW$VV
0HDVXUHPHQW ±

:DQJ ; 0 :RQJ .) (.ZRQJ - < < 7KH UROHV RI
SHUIRUPDQFH OHYHOV LQ WKH GHYHORSPHQW$SSOLHG3V\FKR
±

:HLJOH 6 & 8VLQJ)$&(76 WR 3RGHOHUDWH7HVWLQJLQ

:HLQURWW / -RQHV % 2YHUW YHUVHV &RYHUW DVV
'HYHORSPHQW ±

:RHKU ' - +XIIFXWW $, 5DWHU WUDLQLQJ IRU SH
-RXUQDO RI 2FFXSDWLRQDO DQG 2UJDQL]DWLRQDO 3V\FKR

:ROIH (: *LWRPHU ' + 7KH LQIOXHQFH RI FKDQJH
SV\FKRPHWULF TXDOLWDWLYH DQG TXDQWLWDWLYH (YDOXDWLRQDO 7HVWLQJ 6

Appendix A – Item Writing Guidelines

General Rules for Writing Multiple-Choice Items

1. *Use either a direct question or an incomplete statement as the item stem, whichever seems more appropriate to effective presentation of the item.*

   Some item ideas can be expressed more simply and clearly in the incomplete statement style of question. On the other hand, some items seem to require direct question stems for the most effective expression. Teachers should use the item style that seems most appropriate.

2. *Items should be written in clear and simple language, with vocabulary kept as simple as possible.*

   Like any other item, the multiple-choice item should be perfectly clear. Difficult and technical vocabulary should be avoided unless essential for the purpose of the question. The important elements should generally appear early in the statement of the item, with qualifications and explanations following.

3. *Each item should have one 46 m (1) Expmw2oIve hcorr1(eff) 4(s)4 w p*

8. *!Ø2ìŘ ŜËÖŜăăìØŜ άøìyŘ2ø ŘℕŜăăìyƎ¢ε*

The item should contain only material relevant to its solution, unless selection of what is relevant is part of the problem.

9. *Make the responses grammatically consistent with the stem and parallel with one another in form.*

10. *Make all responses plausible and attractive to students who lack the information or ability tested by the item.*

The incorrect responses should be plausible answers. So far as possible, each response should be designed specifically to attract students who have certain misconceptions or who tend to make certain common errors.

11. *Arrange the responses in logical order, if one exists.*

Where the responses consist of numbers or letters, they should ordinarily be arranged in ascending order. Events should be listed in the order in which they occurred, from earliest to most recent, except when this order would clue the answer. This practice helps insure the student will mark the answer correctly.

12. *Make the responses independent and mutually exclusive.*

Responses should not be interrelated in meaning. Responses that are not mutually-exclusive, aid the student in eliminating wrong answers and reduce the reliability of the item by decreasing the number of effective, functioning responses.

13. *Avoid extraneous clues.*

Since the student is required to associate one of several alternative responses with the

CHECKLIST OF TEST CONSTRUCTION PRINCIPLES
(Multiple Choice Items)

		YES	NO
1.	Is the item significant?		
2.	Does the item have curricular validity?		
3.	Is the item presented in clear and simple language, with vocabulary kept as simple as possible?		
4.	Does the item have one and only one correct answer?		
5.	Does the item state one single central problem completely in the ste (See Helpful Hint below.)		
6.	} • šZš u]v o µ v ÇÆ š Œ vu }šu•Œ¬]^oÁ]v }ŒÆ ••]v P_•M		
7.	Are all responses grammatically consistent with the stem and paralle with one another in form?		
8.	Are all responses plausible (attractive to students who lack the information tested by the item)?		
9.	Are all responses independent and mutually exclusive?		
10.	Are there any extraneous clues due to grammatical inconsistencies, verbal associations, length of response, etc.?		
11.	Were the principles of Universal Design used in constructing the item?		

HELPFUL HINT

To determine if the stem is complete (meaningful all by itself):

1.

)LJXUH % 6FDWWHUSORW 5HJHQWV ([DPLQDWLRQ

)LJXUH % 6WXGHQW 3HUIRUPDQFH 0DS 5HJHQWV ([DPL

)LJXUH % 6FUHH 3ORWV 5HJHQWV ([DPLQDWLRQ L

7DEOH % 6XPPDU\ RI ,WHP 5HVLGXDO &RUUHODWLRQV 5HJH

6WDWLVWLF	9DOXH
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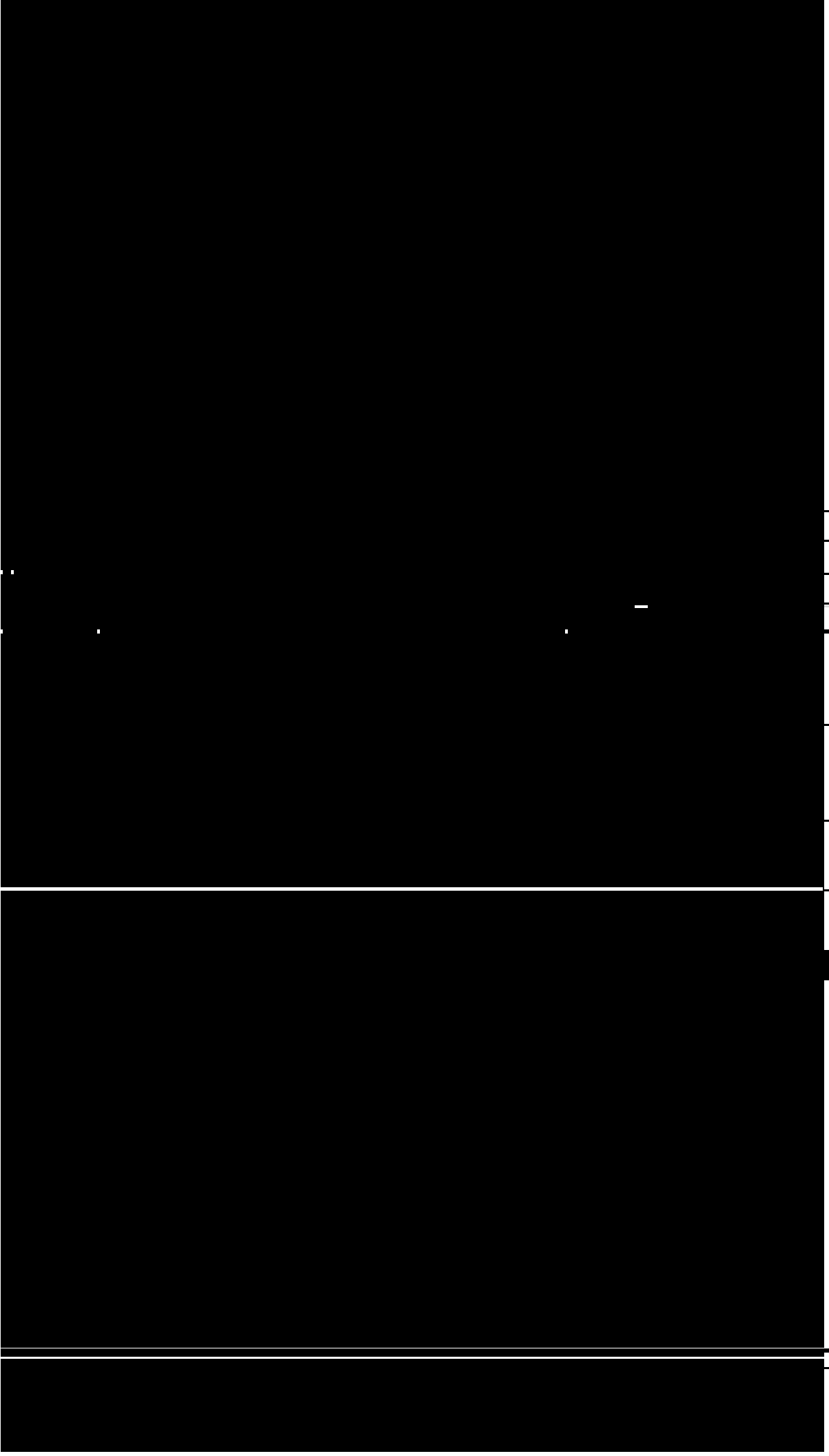
0HDQ	
6'	
0LQLPXP	
3	
3	
3	
3	
3	
0D[LPXP	
! _	_



,WH	1XPEI RI 6WXG	p 9DO	6'	3RLQ %LVH	3RLQW 'LVWU	3RLQW %LVHU 'LVWU	3RLQW %LVHU 'LVWU

)LJXUH & 6FUHH 3ORWV 5HJHQWV ([DPLQDWLRQ L

7DEOH & 6XPPDU\ RI ,WHP 5HVLGXDO &RUUHODWLRQV 5HJH

6WDWLV\ 9DOXH
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0HDQ
6'
0LQLPXP
3
3
3
3
3
0D[LPXP
!_ _

	,QILW 0HDQ 6TXI
	0HD 6' 0LÇ 0D[>
*OREDO	
+LVWRL	

	&RHIIL
6XEMHI	$OSK