1HZ <RUN 6WDWH 5HJHQWV ([DPLQDW
*OREDO +LVWRU\ DQG *HRJUDSK\

7HFKQLFDO 5HSRUW

3UHSDUHG IRU WKH 1HZ <RUN 6WDWH (GXFDWLRQ
E\ 3HDUVRQ

0DUFK

&RS\ULJKW

'HYHORSHG DQG SXEOLVKHG XQGHU FRQWUDFW ZLWK WKH 1
3HDUVRQ

&RS\ULJKW ‹ E\ WKH 1HZ <RUN 6WDWH (GXFDWLRQ 'HSDU\

6HFXUH 0DWHULDOV
$OO ULJKWV UHVHUYHG 1R SDUW RI WKLV GRFXPHQW PD\
PHDQV 8VH RI WKHVH PDWHULDOV LV H[SUHVVO\ OLPLWH
'HSDUWPHQW

&RQWHQWV

&+$37(5 ,1752'8&7,21 ¬ 0 ,6 `Â“"€Ð xÂ p '

,1752'8&7,21
3852326(6 2) 7((($0
7$5*(73238/$7,2167$1'$5'

&+$37(5 &/$66,&$7$0 67$7,67,&$1'67'

,7(0',))&8/7<
,7(0',6&5,0,1$7,21
',6&5,0,1$7,21'2)1),&8/7< `,•'œ"€Ð '```

TABLE1 TOTALEXAMINEDPOPULATION /Fp 0 ™o" €dÐ Ž a'’0

&KDSWHU ,QWURGXFWLRQ

,1752'8&7,21

7KLV WHFKQLFDO UHSRUW GHVFULEHV ([DPL*QDRWLRQ+DQGVRQ JXLGH SURYLGH 1HZWRQ3RZHUWK GRFXPHQWDWLRQ RQ WKH SXUSRVH RI VFRULQJ LQIRUPDWLRQ HYLGHQFH RI ERWK UHOLDELOLW\ DQG GXLGHV DQG UHSRUWLQJ$LXQJVWP DWQRQU\RDUQWK-HQH DGPLQWUDWLRQV± &KDSWHU WUHDWPHQW IRU WDKGHPLQQHVW5HDVXRQV IRU $XJXVW DQG -DQXDU\GPLQLVWUDWLRQ SURYLGHG LQ $SSHQG UHVSHFW$LYHWK DQGDUGV IRU (GXFDWLRQDO 7HVWLQJ6WDQGDUG ³7KH REMHFWLYH RI WKH GRFXPHQWDWLRQ LV QHHGHG WR KHOS WKHP DVVHVV WKHWQDHXUHLQ WRXHWLQQ WXRHW LQWHUSUHWDWLRQV EDVHG$PRQLWRKH (GXFWDWLRQDO5HVHDUFK >$(5$@ $PHULFDQ 3V\FKRORJLFDO $VVRFLDWLRQ >$3$@ 1

S 3„(@PRE IZÊúA Ss uhDC ôRE IZiO S uhD)0 XD•0

WHFKQLFDO GRFXPHQWDWLRQ RI D WHDVWLQJ3UDRJUDPRJUDPW
VWDQGDUGV VFRULQJ JXLPH@@@@@@

	August Admin*		January Admin**		June Admin***	

3UHSDUHG IRU 1<6(' E\ 3HDUVRQ

7DEO&RQVWUXFWSHGQVH ,WHP $QDO\VLV 6XPPDU\PD

7DEO'HHVFULSWLYH 6WDWLVWLFV3DQHO%LQWHULDO &RUUHODWLRQ 5H
([DPLQDWLRQ1RELOO +DQGR*UH\RJUDSK\

Statistics	N	Mean	Min	Q1	Median	Q3	Max
p-value	63	0.72	0.45	0.63	0.72	0.82	0.94
Point-Biserial	63	0.40	0.21	0.35	0.39	0.44	0.79

2%6(59$7,216 ,17(535(7$7,216
7KHSYDOXHV IRU WKH 0& LWHPV UHJDUGLQJ1LOOHPEHUJ4.8yJ-P

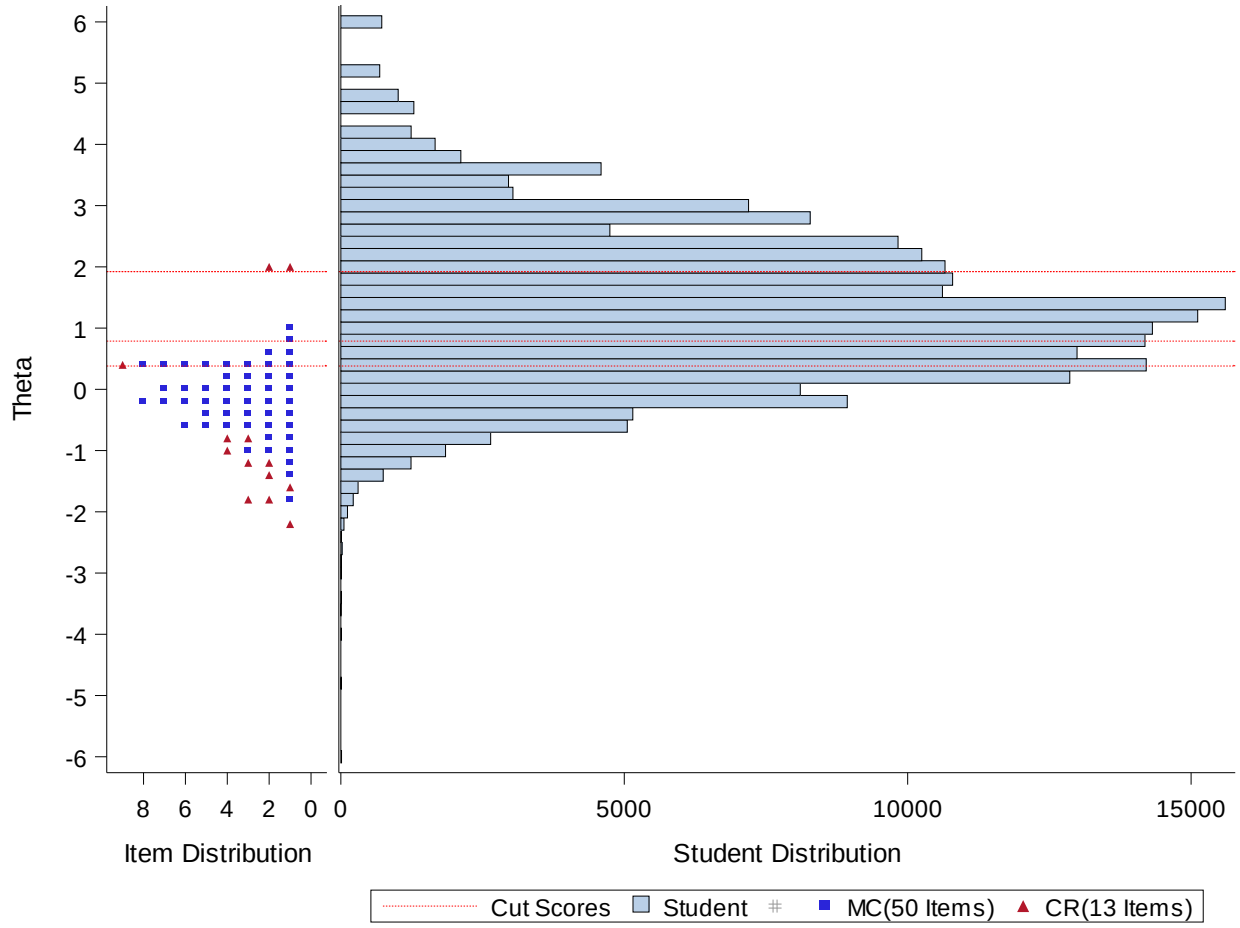
&KDSWHU ,57 &DOLEUDWLRQV (TXDWL 6WDQGDUGV DQG

7KH LWHP UHVSRQVH WKHRU\ 5,7 JHQHUDWHV (QDXVKORWHUHQWKW
DQG *HRJUDSKLFDO VHQ WKH ZRUN RI *HRJ 5DVKEDVFRVDO KD
ORQJWDQGLQJ SHUHQQLDO WHVWLQJ SURJUDPV ,57 KDV
FODVVLFDO WHVW WKHRU\ DQG KDV EHFRPH WKH VWDQGDU
GDWD LQ FDDUHJHVVHVPHQWV DQG HLQ +DPEOHWRQ
FHQWUDO IHDWXUH WKH VSHFLILFDWLRQ RI D PDWKHPDWLFDO
DQ H[DPLQHH¶V UHVSRQVH RQ D WHVW LWHP WR DQ XQGHU
WKRXJKW RI DV SHUIRUPDQFH RQ WKH WHVW DQG
SHUIRUPDQFH RQ WKH WHVW RI LQWHUHVW´ +DPE
SHUIRUPDQFH YDOXH LV 3HQ
WKURXJK WKH UHPDLQGHU RI WKLV UHSRUW

$ IXQGDPHQWDO WDJH RI ,57 LV WKDW LW OLQNV H[DPLQHH
HVWLPDWHV DQG SODFHV WKHP RQ WKH VDPH VFDOH DOO
SHUIRUPDQFH WKDW FRQVLGHUV WKH GLIILFXOW\ RI WKH WH

$$P_{ni} \; X \qquad = \frac{T_n \quad D_{ij}}{T_n \quad D_{ij}}$$

7KH 5DVFK PRGHO SODFHV ERWK SHUIRUPDQFH DQG LWHP
RGGV RU ORJLWV RQ WKH VDPH FRQWLQXXP :KHQ WKH PR
PRGHO SURYLGHV HVWLPDWHV RI H[DPLQHH SHUIRUPDQFH D
LQYDULDQW DFURVV UDQGRP VDPSOHV RI HO HSO€0 We˜TÐ ¯¬ €H

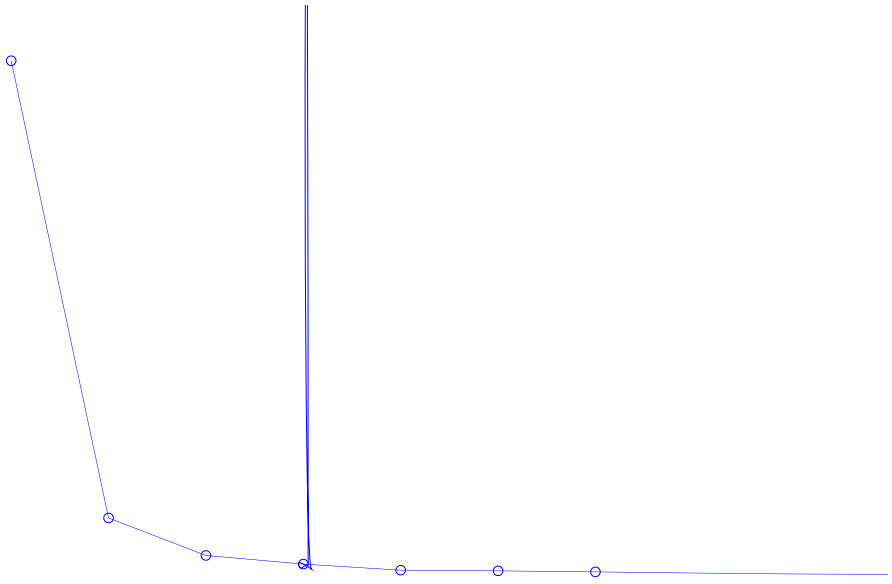


) L J X U H W X G H Q W 3 H U I R U P D Q F H W D S [D P L Q H O R W E L R Q L D Q G R U \ * H R J U D S K \

& + (& . , 1 * 5 $ 6 & + $ 6 6 2 1 6

6 L Q F H W K H 5 D V $ H 5 D V ™4&] H p °8(L P Ž y.¼ ÷V$( ] 6g° ðÞËÜ] y.0 ` “F } 6g

$ SDUDOOHO DQDO\ZVLV F+RRQUGQXFWHGGVWRQKJHQ6K FRPSRQHQ
UHDO IURP FRPSRQHQW3DWKDWHDUHQDQQGWXWHVRGWHFK KR
PDQ\ IDFWRUV H[LVW LQ S)URLQWLKHSDFRPSOHQQDO\VLV
VL]HV HTXDO WR WKH RULJLQDO GDWD ZHUH FUHDWHG)R
SHUIRUPHG DQG WKH UHVXOWLQJHULJHQYDORXHVRQWHQWK7H
SHUFHQWLOH YDOXH RI WKH GLVWULEXWLRQ RI WKH HLJ
SORWWHG *LYHQ WKH VL]H RI WKH GDWD JHQHUDWHG IRU
HVVHQWLDOO\ HTXLYDOHQWHQWRSOLQWRQJDQ HLJHQYDOXH R



)LJXUH FUHH 3RLQWV ([DPLQLQJ WKH EHKDYLRU RI WKH JUDSK\

/RFDO ,QGHSHQGHQFH

/RFDO LQGHSHQGHQFH /, LV D IXQGDPHQWDO DVVXPSW
VWDWLVWLFDO SURSHUWLHV SRQVHTXHQFHV RQH LWHP WKRXG
H[DPLQLQJ WKH SRQVH WR DQ\ RWKHU LWHP RQ WKH WHVW
FRPSULVHG ;RI; LW LPW ORFDOO\ LQGHSHQGHQW WKHQ WHVS
IRU [DQO[«[Q DQG

3UHSDUHG IRU 1<6(' E\ 3HDUVRQ

[

UHVSRQVHV WR WKHVH WZR LWHPV DV VKRZQ EHORZ %DVH
FDQ EH GHULYHG

$$P\left(X_i = x_i, X_j = x_j\right) = P\left(X_i = x_i\right) P\left(X_j = x_j\right)$$

0DUDLV DQG $QGULFK SRLQW RXW WKDW ORFDO LWH
RFFXU LQ WZR ZD\V WKDW GR QRW LQYROYH [7KH ILUVW ZD\ R
DVVXPSWLRQ RI XQLGLPHQVLRQDOLW\ LV YLRODWHG +HUH
GRPLQDQW GLPHQVLRQ GHWHUPLQHV VWXGHQW SHUIRUPDQFH
7KH VHFRQG RFFXUV ZKHQ UHVSRQVHV WR DQ LWHP GLVSHUVH R
7KLV LV D YLRODWLRQ RI VWDWLVWLFDO LQGHSHQGHQFH DQ
GLVWLQJXLVKLQJ WKH WZR VRXUFHV RI ORFDOLW\ GHSHQGHQF
LQGHSHQGHQFH FDQ EH UHODWHG WR XQLGLPHQVLRQDOLW\
WKHUHIRUH TXHVWLRQV GLIIHUHQW WHVWV

5HVLGXDO LWHP FRUUHODWLRQV SURYLGHG LQ :,167(36 IR
WKH ORFDO GHSHQGHQFH ([DPLQLQJ WKH ORFDOLW\ RI LWHP
LWHPV ,Q JHQHUDO WKHVH SURFHGXUHV DOORZV)LUVW H[SO
EDVHG RQ WKH 5DVFK PRGHO LVDQG WKHQ SDUDPHWULF
GHYLDWLRQV EHWZHHQ WKH H[SHFWHG DQG REVHUYHG
GHWHUPLQHG IRU HDFK LWHP)LQDOO\ IRU HDFK LWHP SDL
GHYLDWLRQV LV FRPSXWHG

7KUHH W\SHV RI UHVLGXDO FRUUHODWLRQV DUH GHVFULEHG
ORJLW ,W LV QRWHG WKDW WKH UDZ VFRUH UHVLGXDO FRU
LQGH[D SRSXODU VWDWLVWLF XVHG WR HDVH FRPSXWDWLRQ
VWDWLVWLF LVí DSSURSULDWH RQO\ORFDO GHSHQGHQFH
<HQ 7KXV WKH YDULDQFH RI WKH GRXEOH EíSRUR[LPDWHV
WKH H[SHFWHG YDOXH [YDOXHV WKDW DUH JUHDWHU WKDQ
GHSHQGHQFH WKDW RSXUORGE H[DPLQHG E\ WHVW GHYHORSHU

6LQFH WKH WKUHH UHVLGXDO FRUUHODWLRQV DUH YHU\ V
FRUUHODWLRQ´ LQ :,167(36 ZDV XVHG IRU WKHVH DQDO\VHV

7DEOH 4KRZV WKH VXPPDU\ VWDWLVWLFV DQG GHYLDWLRQ PL
DQG VHYHUDO SHUFHQW3LOHV² IRU DOO WKH UHVLGXDO FRUU
WHVW 7KH WRWDO QXPEHU RI LWHP SDLUV DQDO\VHG LQ WKH GDX
FRUUHODWLRQV JUHDWHU WKDQ DUHZDUGV RQH SRVLWLYH SDL
ZLWKQD EVROXWH YDOXH RI FRUUHODWLRQ JUHDWHU WKDQ 7KHVH ZHUH UDQGRP LGXDO FRUU
YHUVVOLJKWO\ DQG WKH UHFRPPHQGDWLRQV LQFOXGHG DWLRQZLWKUDHQVLGXDO FRUU
YDORXH VXJJHVWLQJ WKDW F LWHP LQGHSHQGHQFH 5HJHQHUDWHG
([DPLQDWLRQ RQ EDO +DLVGVRHURJUDSK\

7DEOH 6XPPDU\ RI ,WHP 5HVLGXDO &RUUHODWLRQV 5HJHQ\
+LVWRU\ DQG *HRJUDSK\

Statistic Type	Value
N	1953
Mean	> -.01
SD	0.02
Minimum	> -.10
P_{10}	> -.04
P_{25}	> -.03
P_{50}	

3UHSDUHG IRU 1<6(' E\ 3HDUVRQ

HUURU +DUYLOO $GGLWLRQDOO\ WKH YDOXH RI WKH VWDQGDUG GHYLDWLRQ LQWR DFFRXQW &RQVLGHU WKDW D GLIIHUHQW IURP D 6(0 RI WRQ D SRLQW WHV

7UDGLWLRQDO 6WDQGDUG (UURU RI 0HDVXUHPHQW &RQILGHQ

)LJXUH RQGLWLRQDO 6WDQGDUGL]HG UHVLGXDO SORWV DQG KLVWRJUDP
*HRJUDSK\
'(&,6,21 &216,67(1&< $&&85$&< 67$7(0(17
,Q D VWDEOH VHWWOHPHQW SURJUDPPLQJ LQ NQRZL
VWXGHQWV DUH FODVVLILHG LQWR SHUI

TEST TWO	TEST ONE			
	LEVEL	LEVEL I	MARGINAL	
LEVEL I	11	12	í ·	
LEVEL II	21	22	î ·	
MARGINAL	· í	· î	1	

)LJXUH IV HXGHRFLVLRQ 7DEOH IRU 7ZR +\SRWKHWLFDO &DWHJRU

TEST TWO	TEST ONE				
	LEVEL	LEVEL I	LEVEL II	LEVEL I\	MARGINAL
LEVEL I	11	12	13	14	í ·
LEVEL II	21	22	23	24	î ·
LEVEL III	31	32	33	34	ï ·
LEVEL IV	41	42	43	44	ð ·
MARGINAL	· í	· î	· ï	· ð	1

)LJXUH IV HXGHRFLVLRQ 7DEOH IRU)RXU +\SRWKHWLFDO &DWHJR

,I D VWXGHQW LV FODVVLILHG E\ VEHGLQRJ L7QHVRQH2QFHD¶WH3VR SUREDEOH ZRXOG LW EH WKDW WKH VWXGHQW ZRXOG EH UH KH RU VKH WRRN 7RYWU7ZRSSDLQJRHTXDOO\ GL7KLFXOWRISRUPW LV D PHDVXUH RI GHFLVLRQ FRQVLVWHQ

7KH SURSRUWLRQV RI FRUHWWZRGDHFGVILRXQV FDWHJRULHV D IROORZLQJ WZR IRUPXODV UHVSHFWLYHO\

T T a"ë ðŒ3 3')Ð à 0

t ~ a"ë ó'…cr•

3UHSDUHG IRU 1<6(' E\ 3HDUVRQ

F b a"ë òl03D((Ð 0

7KH 5HJHQWV ([DPLQDWLRQ LQ *OREDO +LVWRU\ DQG DFKLHYHPHQW RQ WKH 1<6 3± &XUULFXOXP 6WDQGDUGV IRU *OREDO +LVWRU\ DQG *HRJUDSK\ VWDQGDUGV F KWWS ZZZ S Q\VHG JRY FLDL VRFVW VVUJ KWPO

&RQWHQW 9DOLGLW\

&RQWHQW YDOLGLW\ LV QHFHVVDULO\ FRQFHUQHG ZLWK V HYLGHQFH WKDW WKH WHVW SURYLGHV DQ DFFXUDWH PHDV GHILQHG FRQWHQW GRPDLQ EOXHSULQW IRU WKH 5HJHQWV ([DPL *HRJUDSK\ LV HVVHQWLDOO\ WKH GHVLJQ GRFXPHQW IRU FR GHILQLWLRQ RI WKH FRQWHQW GRPDLQ WKDW LV WR EH UHS SURFHVV GLVFXVVHG LQ WKH QH[W VHFWLRQ LV LQ SODFH EOXHSULQW LV PHW LQ DOO RSHUDWLRQDO IRUPV RI WKH H[

7DEOHGLVSOD\V WKH LWHP W\SHV XVHG WR DVVHVV HDFK V

7DEOH7HVW %OXHSULQW 5HJHQWV ([DPLQDWLRQ LQ *OREDO

Item Type	Standards
Multiple choice	SeeSpecifications Grid*
Thematic essay	World History
	Geography
Document	

7KH GLVWLQFW VWHSV IRU RSHUDWLRQDO WHVW VFRULQJ
HOHPHQWV DQG EHJLQ EHIRUH WKH RSHUDWLRQDO WHVW LV
GXULQJ ZKLFK PDQ\ PRUH LWHPV WKDQ DSSHDU LQ RQH WUHH RU
UHSUHVHQWDWLYH VDPSOH RI DQ XQGHUO\LQJ SRSXODWLRQ
DFURVV WKH UDQJH RI SRVVLEOH UHVSRQVH WUHH VWUXFWXUHV
REMHFWLYH RI MXGJLQJ UHVSRQVH WUHH VFRUHV LV WR FUHDWH
H[HFXWLRQ RQ WKH IRP ZKLFK DUH XVHG WR JHQHUDWH LPSRU
WKH LWHP LQ RUGHU WR SURGXFH DEOH DQGLYDOLHG EDFKLHV RU FUHD
JXLGHV DQG VFRULQJ RSHUDWLRQDO VFRULQJ

7KH IROORZLQJ DQDO\VHV WZKHUH5HFRQQXVW[DPROLEDVOLRQVLWR
DQG *HRJUDSK\

LWHP LIILFXOW\
LWHP VFULPLQDWLRQ
GLIIHUHQWLDOLWHPIXQFWLRQLQJ
,57PRGHOV
WHVWHOLDELOLW\
FODVVLILFDWLRQHQF\
WHVWLPHQVLRQDOLW\

,WHP 'LIILFXOW\

0XOWLSOH DQDO\VHV DOORZ DQ HYDOXDWLRQ RI XQGLWHP GLIILFXOW\ LWHP OHZHDWLRQSHXWHGPDWHV&,DQGHV&5RUWHR
5HJHQWV ([DPL*QDWLRQ+LQGVRHU JUDSQYDOXHV FRQVLV
ZLWK WKH WDUJHWHGPDXGHOVILFDQQWRURPZLWK D PHDQ RI
)XUWKHUPRUHWKHLWHPLEQLWHULDO YDOXHV GLVFXVVHG LQ WKH IROO
LQGLFDWH WKDW WKH\ DUH GLVFULP1LQDWLQR WKHFWKLRJQ SRU
IRU DQGRK5¼ÀGHG-LWLRQDOHGHWDLOV

,WHP 'LVFULPLQDWLRQ

+RZ ZHOO WKH LWHPV RQ DHWHQVKLJKLVFULPLQDWH EHW

+DULN 3 &ODXVHU % (*UDERYVN\ , 1XQJHVWHU 5 -
6SUL Q

3UHSDUHG IRU 1<6(' E\ 3HDUVRQ

3UHSDUHG IRU 1<6(' E\ 3HDUVRQ

7DEOH6%RU DEOH Q X D U\ $GPLQLVWUDWLRQ

Raw Score	Ability	
0	> .6500	0
1	> .4330	5
2	> .7211	42
	> .2296	97
	> .1990	086
		990
20		
27		
28		27

$YRLG H[FHVVLYH ³ZLQGRZ GUHVVLQJ´

7KH LWHP VKRXOG FRQWDLQ RQO\ PDWHULDO UHOHYD
ZKDW LV UHOHYDQW LV SDUW RI WKH SUREOHP

0DNH WKH UHVSRQVHV JUDPPDWLFDOO\ FRUUHFW SDUWLFOH
RQH DQRWKHU LQ IRUP

0DNH DOO UHVSRQVHV SODXVLEOH DQG DWWUDFWLYH WR
RU DELOLW\ WHVWHG E\ WKH LWHP

7KH LQFRUUHFW UHVSRQVHV VKRXOG DEH SORVVLEOH
UHVSRQVH VKRXOG EH VSHFLILFDOO\ WR DWWUDFW V
PLVFRQFHSWLRQV RU ZKR WHQG WR PDNH FHUWDLQ FRPP

$UUDQJH WKH UHVSRQVHV LQ ORJLFDO RUGHU LI RQH H[

:KHUH WKH UHVSRQVHV FRQVLVW RI QXPEHUV RU OH
DUUDQJHG LQ DVFHQGLQJ RU GHVFHQGLQJ RUGHU EH OLVWHG LQ WKH
RFFXUUHG IURP HDUOLHVW WR PRVW UHFHQW H[FHSW
7KLV SUDFWLFH KHOSV LQVXUH WKHOÂ/“bDtÐ FFS€a H

&+(&./,67 2) 7(67 &21756&7,21$/ 3/(0XOWLSOH &KRLFH ,WHPV

	<(6	12
,V WKH LWHP VLJQLILFDQW"		
'RHV WKH LWHP KDYH FXUULFXODU YDO		
,V WKH LWHP SUHVHQWHG LQ FOHDU DQ YRFDEXODU\ NHSW DV VLPSOH DV SRVV		
'RHV WKH LWHP DQG RYHUDOO UHVSRQVH FRUUHFW		
'RHV WKH LWHP VWDWH RQH VLQJOH FH VWHP" 6HH +HOSIXO +LQW EHORZ		
'RHV WKH VWHP LQFOXGH DQ\ H[WUDQH GUHVVLQJ´ "		
$UH DOO UHVSRQVHV JUDPPDWLFDOO SDUDOOHO ZLWK RQH DQRWKHU LQ IRU		
$UH DOO UHVSRQVHV SODXVLEOH DWW LQIRUPDWLRQ WHVWHG E\ WKH LWHP "		
$UH DOO UHVSRQVHV LQGHSHQGHQW DQ		
$UH WKHUH [WUDQHRXV FOXHV GXH WR JU LQFRQVLVWHQFLHV YHUEDO DVVRFLDW		
:HUH WKH SULQFLSOHV RI 8QLYHUVDO LWHP"		

+(/3)8/ +,17

7R GHWHUPLQH LI WKHPHVHDQLQJXFRDSOHEVHLWVHOI

&RYHU XS WKH UHSRQVHV DQG UHDG MXVW WKH VWHP

7U\ WR WXUQ WKH LWHP LQWR D TXHVWLRQ DQG UHDG LW DORXG\ GUDZLQJ D OLQH ,I LW ZRXOG QRW EH DQ RUGLQDU\ VHQWHQFH

7KH VWHP PXVW FRQVLVW RI D VWDWHPHQW WKDW FRQW

$SSHQGL[' 7DEOHV DQG)LJXUHV IRU $X $GPLQLVWUDWLRQ

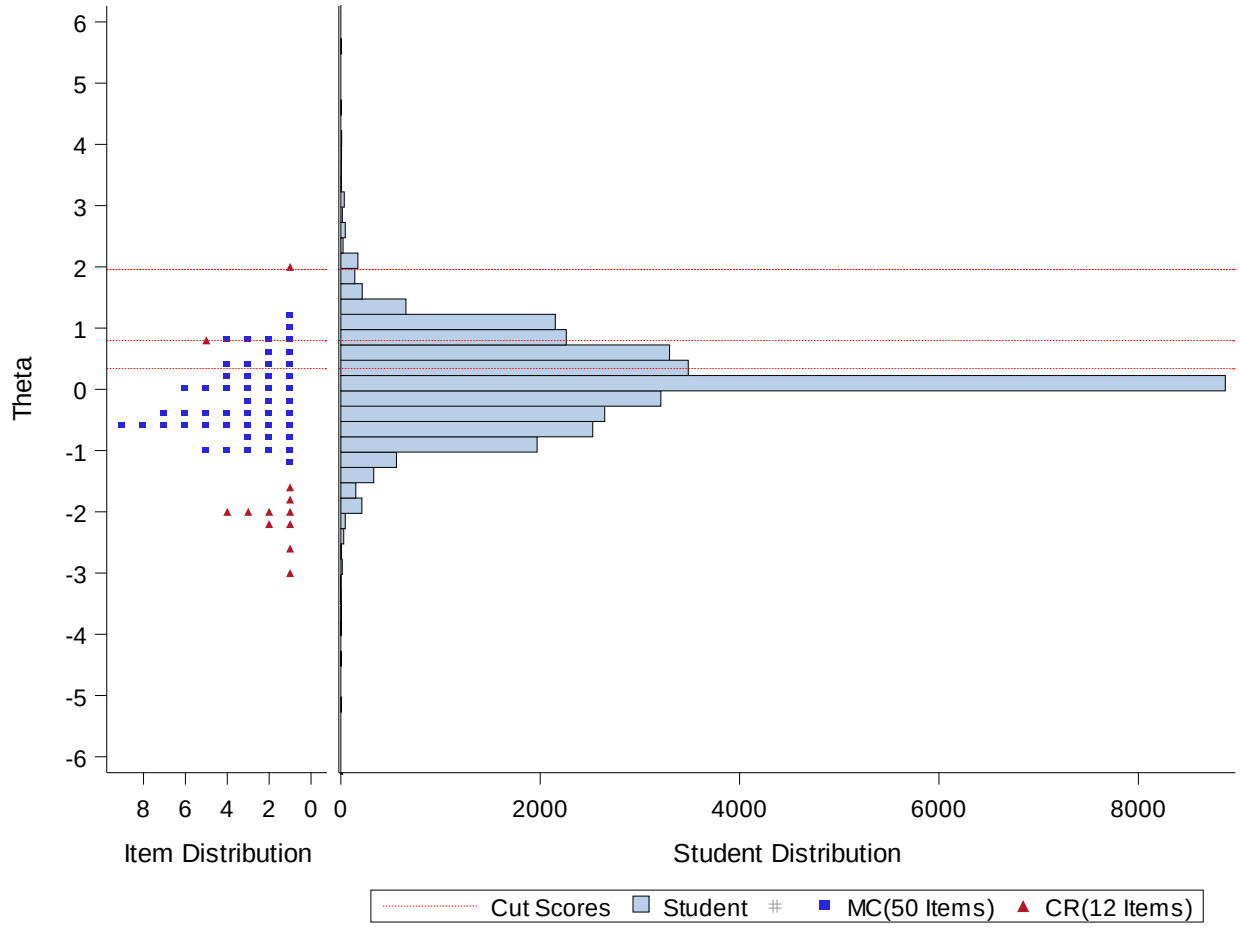
7DEOH0XOWL&KRLFH ,WHP $QDO\VLVJHQHUDWHGPDU[DPLQLVWUDWLRQ LQ +LVWRULFDO *HRJUDSK\

Item							

)LJXUH6FDWWHU3ORWV([DPLQ*OREDO+DQGR*UH\RJUDSK\

7DEOH'HVFULSWLYH6WDWLVWLFV&RUUHODWLRQ(QGDQJHUHG+DQGR*UH\RJUDSK\

Statistics	N	Mean	Min	Q1	Median	Q3	Max
p-value	62	0.57	0.27	0.43	0.56	0.69	0.94
Point-Biserial	62	0.27	0.08	0.21	0.27	0.30	0.66



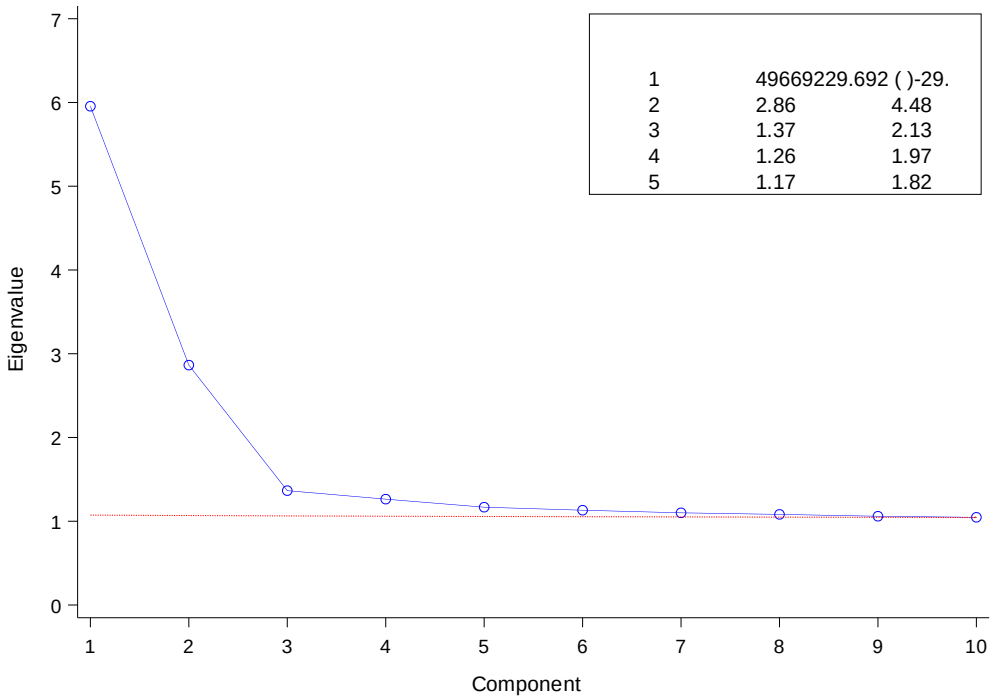
)LJXUH6WXGHQW 3HUIRUPDQFH0DS[DPL]HGEDQGZLGWKDQG+LVWRJUDP\ *HRJUDSK\

3UHSDUHG IRU 1<6(' E\ 3HDUVRQ

)LJXUH6FUHH 35HRJWHVQWV ([DPLQDWLRQ +LQQWR*UH\RJUDSK\

7DEOH6XPPDU\ RI ,WHP 5HVLGXDO&RUUHODWLRQV([DPLQDWLRQ LQ +LVWRJUDSK\

Statistic Type	Value
N	1891
Mean	>.02
SD	0.03



)LJXUH6FUHH 3ORWVQWV ([DPLQLQJ1XPEHURI +LGGHQ*URXSV\RJUDSK\

7DEOH6XPPDU\ RI ,WHP 5HVLGXDO5HJUHVVLRQ:HLJKWV([DPLQLQJ1XPEHURI +LGGHQ*URXSV\

Statistic Type	Value
N	2016
Mean	>.01
SD	0.04
Minimum	>.11
P10	>.05
P25	>.03
P50	>.02
P75	0.00
P90	0.02
Maximum	0.33
>|0.20|	6

3UHSDUHG IRU 1<6(' E\ 3HDUVRQ

7DEOH*URXS 0HDQV ([DPLQDWLRQ 'DWD*UDSK\