

&RQWHQWV

,QWURGXFWRQ

3URJUDP 'HVLJQ DQG *RDOV

3URJUDP +LVWRU\

,QG XVWU\ 5HODWLRQVKLSV

3URJUDP /RFDWLRQV

3URJUDP 0LVVLRQ (GXFDWLRQDO 2EMHFWLYHV DQG 2XWFRPH

3URJUDP 0LVVLRQ

3URJUDP (GXFDWLRQDO 2EMHFWLYHV

5HODWLRQVKLS EHWZHHQ 3URJUDP 2EMHFWLYHV DQG W

3URJUDP 2XWFRPHV

&\FOHRI \$VVHVVPHQW IRU 3URJUDP 2XWFRPHV

,QWURGXFWRQ 0HWKRGRORJ\ DQG WKH \$VVHVVPHQW

6XPPDU\RI \$VVHVVPHQW \$FWLYLWLHV (YLGHQFH RI 6W

,QWURGXFWRQ

0HWKRGRORJ\IRU \$VVHVVPHQW RI 6WXGHQW 2XWF

7DUJHWHG 'LUHFW \$VVHVVPHQW \$FWLYLWLHV

2XWFRPH E ([SHULPHQWDWLRQ

2XWFRPH H 3UREOHP 6ROYLQJ

2XWFRPH I (WKLFV

2XWFRPH J &RPPXQLFDWLRQ

2XWFRPH K ,PSDFW

%6((\$VVHVVPHQW

V

2XWFRPH L ,QGHSHQGHQW /HDUQLQJ

2XWFRPH M &RQWHPSRUDU\,VVXH

2XWFRPH N (QJLQHHULQJ 7RROV

6XPPDU\RIDOO WDUJHWHG GLUHFW DVVHV

,QGLUHFW \$VVHVPHQW

&KDQJHV 5HVXOWLQJ IURP \$VVHVPHQW

2XWFRPH E ([SHULPHQWDWLRQ

2XWFRPH F 'HVLJQ

2XWFRPH H 3UREOHP 6ROYV LQJ

2XWFRPH I (WKLFV

WKH %6((SURJUDP WR PHHW WKH LQVWLWXWLRQDO JRDO RIPD
7KH , \$% KDV EHHQ D PDLQVWD\ LQ WKH GHYHORSPHQW RI WKI
, \$% SURYLGHV DGYLFH DQG FRXQVHO WR WKH ((SURJUDP ZLW
WLRQDO UHVXRUFHV FDUHHU JXLGDQFH DQG SODFHPHQW DF
GHYHORSPHQW DVVLVWDQFH , QDGGLWLRQ HDFK DGYLVRU\
UHODWLRQV LQIRUPDWLRQ DQG SRWHQWLDOO\ SURYLGHV D
RSSRUWXQLWLHV ZLWK LQGXVWU\ IRU VWXGHQWV DQG IDFXOV

3URJUDP /RFDWLRQV

7KH %6((SURJUDP LV ORFDWHG DW ERWK 2UHJRQ 7HFK FDPSXV
D ODUJH SRUWLRQ RI UXUDO 2UHJRQ DQG &DOLIRUQLD DV ZHO
LV WKH RQO\ XQLYHUVLW\ RIIHULQJ PXOWLSOH FODVVLFDQ HQ
ODVWHU·V OHYHO LQ D UHJLRQ UDQJLQJ IURP &RUYDOOLV 2U
VRXWK DQG IURP WKH 3DFLILF FRDVW LQ WKH ZHVW WR %RLVH

7KH .ODPDWK)DOOV FDPSXV LQFOXGHV D ODUJH VRODU IDFLC
25(& ZLWK H[FHSWLRQDO RSSRUWXQLWLHV IRU VWXGHQWV
HGHUJ\ DQG UHQHZDEOH HGHUJ\ 25(& DV VWDWHG RQ LWV Z
UHQHZDEOH> @HGHUJ\ XVH LQ 2UHJRQ DQG WKURXJKRXW WK
WLRQDO SURJUDPV DQG SUDFWLFDO LQIRUPDWLRQ DQG KHVH
SUDFWLFDO H[SHULHQFH LQ JHRWKHUPDO VRODU ZLQG ELR
HGHUJ\

7KH :LOVRQYLOOH FDPSXV RIIHUV H[FHOOHQW DFFHVV WR LQV
ZLWK WKH 6LOLFRQ)RUHVW DV WKH VHPLFRQGXFWRU LQGXVW

7KLV DUUDQJHPHQW VDWLVILHV WKH QHHGV RI WKH VWDWH RI
VRXWKHUQ UXUDO SDUW RI WKH VWDWH WR VHUYH WKDW UHJ
WR VWXGHQWV ZKR GHVLUH D ORZ VWXGHQW WR IDFXOW\ UDW

3URJUDP 0LVVLRQ (GXFDWLRQDO 2EMHFWLYH

3URJUDP 0LVVLRQ

7KH PLVVLRQ RI WKH (OHFWULFDQ (QJLQHULQJ %DFKHORU RI
KHQVLYH SURJUDP RI LQVWUXFWLRQ WKDW ZLOO HQDEOH JUDC
IRU LPPHGLDWH HPSOR\PHQW DQG FRQWVVBQV WY0€QQWDVVB

F DUHHUV)DFXG ... V ZLOO HQJDJH LQ DS
SURJUDP (GXF DWLRQDO V ... KHLU FRPPXQLWLHV

3URJUDP (GXFDWLRQDO 2EMHFWLYHV

‡3XEOLF6HUYLEFH

7KH `VWURQJ WHFKQLFDO EDFNJURXQGµ RI 3(2 FRUUVSRQG
PLVVLRQ RI 2UHJRQ 7HFK·V GHJUHH SURJUDPV

3(2 LV DOLJQHG ZLWK WKH LQVWLWXWLRQ·V FRUH WKHPHV RI
2UHJRQ 7HFK %6((SURJUDP SUHSDUHV VWXGHQWV WR WDNH V
JLQHHUV WHVW HQJLQHHUV FGDUDFWHULJDWLRQ HQJLQHHU

&\FOH RI \$VVHV VPHQW IRU 3URJUDP 2XWFRPHV

,QWURGXFWRQ 0HWKRGRORJ\ DQG WKH \$VVHV VPHQW

\$VVHV VPHQW RI WKH SURJUDP RXWFRPHV LV FRQGXFWHG RYH
PXP RXWFRPHV DVVHV VHG HDFK \HDU 7KH DVVHV VPHQW F\FOH
\HDU 7KLV FKDQJH ZDV LPSOH PHQWHG DW DQ DVVHV VPHQW F
WKLV PHHWLQJ DVVHV VPHQW FRRUGLQDWRUV UHSUHVHQWL
DQG 5HQHZDEOH (QHUI) ((5('HSDUWPHQW DOLJQHG WKHLU
DVVHV VHV VLPLODU RXWFRPHV RQ WKH VDPH \HDU 7KH LQW
DVVHV VPHQW SURFHVV DQG SURGXFH PRUH PHDQLQJIXO GDW
LQ WKH ((5('HSDUWPHQW

6WXGHQW 2XWFRPH			
D)XQGDPHQWDOV			
E ([SHULPHQWDWLRQ			,
F 'HVLJQ			
G 7HDPZRUN			
H 3UREOHP VROYLQJ			
I (WKLQV			,
J &RPPXQLFDWLRQ			
K ,PSDFW			,
L ,QGHSHQQHG OHDUQLQJ			
M &RQWHPSRU DU\ LVVXH,			
N (QJLQH HULQJ WRROV			

7DEOH 16 ((2XWFRPH \$VVHV VPHQW LQ &LFDWHV\WODGHV
, LQGLFDWHV DGGLWLRQDO DVVHV VPHQW GRQH WKLV \HDU

(IIFWLYH WKH DFDGHPLF \HDU WKH DVVHV VPHQW F\FOH
DVVHV VPHQW F\FOH VWDUWHG LQ WKH)DOO 7KLV FKDQJH UHI
FROOHFWLRQ LQ WKH VSULQJ WHUP ,Q WKH \$VVHV VPHQW
UHFRRPHQLQJ WKDW SURJUDPV EHJLQ GDWD FROOHFWLRQ I
FORVLQJ WKH ORRS PHHWLQJV DW &RQYRFDWLRQ LQ WKH)DO
EDVHG RQ WKH IDFW WKDW PDQ\ SURJUDPV IRXQG WKDW KDYL
DQ DFDGHPLF \HDU FUHDWHG XQQHFHVVDU\ FRQIXVLQJ DQG Z
IRU PDQ\ IDFXOW\ 7KH DVVHV VPHQW UHSRUW LV FRPSOHWHG I
DFDGHPLF \HDU

,QpÀ`pPVVô•sDb!— ...`EH(HVVUò•HG UIFKU\
UHFRRW IR p &\FOHLQDWLRQP @Q
UH &RP pLYH WK

SHUIRUPDQFH FULWHULD DV ZHOO DV WKH SHUFHQWDJH RI V
DERYH

%6((\$VVHVVPHQW

2XWFRPH E ([SHULPHQWDWLRQ

2XWFRPH H 3UR\$OBE6QDWLQJRLGHQWLI\ IRUPXODWH
OHPV

\$ WDUJHWHG GLUHFW DVVHVPHQW (OHFWURQLFV\WKH\ZDWR
RI (1*5 &DSVWRQH 3URMHFW

:HE (1*5 :LQWHU 'U &ULVWLQD &UHVSR

7KLV RXWFRPH ZDV DVVHVPHGLQ (((OHFWURQLFV,,LQ:LQV
SURMHFW FRQVLVWHG RIGHVLJQLQJ DQG LPSOHPHQWLQJ DQ
%-7 WHFKQRORJ\ DQG WKHQ DQWKHU RQH XVLQJ 026)(7 WHFK
EXLOG DQG WHVW WKH %-7 WUDQVLVWRU RQO\ VLPXODWLRQ U
SURLGHG ZLWK DVHW RIGHVLJQ JXLGHOLQHV DV ZHOODVVR
DGKHUWR \$IWHU FRPSOHWLQJ WKHLU GHVLJQV VWXGHQWV
RQ DVHW RISHUIRUPDQFH SDUDPHWHUV DQG FRPSDUH WKH S
ZHOODV DVWDQGDUG RS DPS 6WXGHQWV ZHUH DVNHG WR
7UDQVDFWLRQV MRXUQDO WHPSODWH ,Q WKHLU UHSRUW VW
SUREOHP WKH\ ZHUH VROYLQJ DV ZHOODV GHVFULEH WKHLU V

7ZHQW\ VL[%6((LQFOXGLQJ RQH %'5(VWXGHQWV ZHUH DVV
PDQFH FULWHULD OLVWHG LQ WKH WDEOH EHORZ 7KH PLQLP

KDYH DERYH RIWKH VWXGHQWV SHUIR UPLQJ DW WKH DFFRPS
FULWHULD

&ULWHULD	DYHOR	\$EQRPSO	(HPSO	DWXGHQWV
H ,GHQWLI\				
H)RUPXODWH				
H 6ROYH				

7DEQH *5 DVVHVVP HQW RI 2XWFRPH H 3UREOHP V

%6((\$VVHVVP HQW

2XWFRPH L , QGHSHS QGHEWJQHDWLRQRI WKH QHHG IRU
HQJJDJHLQ OLIH ORQJOHDUQLQJ

\$ WDUJHWHG GLUHFW DVVHVPHQW RLOKDU RXWFRPHHDZDGV'GJ
3URFHVVVLQJ

:HE ((6SULQJ 'U ODWHR \$ER\

7KLV RXWFRPH ZDV DVVHVPHG XVLQJ D SURMHFW ZKLFK UHTXL

2XWFRPH M &RQW\$NSRZDNGVXRIVFRQWHPSRUDU\LVV
\$ WDUJHWHG GLUHFW DVVHVPHQW RIWKLVRXWFRPHZDVGR

2XWFRPH N (QJLQSHDEDOZWRWR XVH WKH WHFKQLTXH
 HQJLQHHULQJ WRROV QHFHVVDU\ IRU HQJLQHHULQJ SUDFWLF
 \$ WDUJHWHG GLUHFW DVVHVVP HQW\$G YDKLFHGX&WLFH V B VVGRH
 :LOVRQYLOOH (()DOO 'U \$DURQ 6FKHU

7KLV RXWFRPH ZDV DVVHVVVHG E\ PHDQV RID SURMHFW 6PDOO
 DQG WHVW D FDSDFLWLYH SUR[LPLW\ GHWHFWRU FLUFXLW DF
 GHQWV ILUVW UHVHDFKHG DQG FKR VH WKHLU RZQ SUDFWLF
 ZKLFK KDG WR EH DSSURYHG E\ WKH LQVWUXFWRU 6WXGHQW
 FLUFXLW FRQGXFWHG /7VSLFH VLPXODWLRQV DQG WXUQHGL
 FOXGLQJDQ\ LPSRUWDQW RU JRYHUQLQJ PDWKHPDWLFDO UHC
 RIFKRLFH VXFK DV .L&DGRU (DJOH WR GHVLJQ WKHLU ERDU
 ZHUH UHTXLUHG WR KDQG VROGHU WKHLU RZQ FRPSRQH QWV R
 GHPRQVWUDWHG WKHLU ZRUN WR WKH FODVV)LQDOO\ VWX
 ZRUNLQJ ERDUGV DQG WKH XQGHUO\LQJ SULQFLSOHV

\$ WRWDO RI HLJKW %6((VWXGHQWV ZHUH DVVHVVVHG LQ)DOO
 6\VWHPV \$QDO\VLV 7KH UHVXOWV DUH XPPDULJHG LQ WDEOH

&ULWHULD	'HYHOR\$EERPSO(LNPSO)DWXGHQWV		
N 3URILFL	HQF\		
N +DUGZDUH			
N &RPPXQLFDWLRQ		#\$(ñ DW)70`fD p	

6XPPDU\RIDOO WDUJHWHG GLUHFW DVVHVVP HQWV

7RWDO 1XPEHU 3HUFHQW DJ
6WXGHQWV 26 W X G H Q W V

E ([SHULPHQMDWRLOOYLOOH
 E 'HVLJQ
 E &RQGXFV
 E \$QDO\]H
 H 3UREOHP 6ROYLQYLOOH :HE
 H ,GHQWLI\
 H)RUPXODWH
 H 6ROYH
 I (WKLQDPDWK)DOOV
 I .QRZOHGJH
 I 3UDFWLFH
 J &RPPXQLFDWRLOOYLOOH
 J 2UDO
 J \$FTXLVLWLRQ
 J :ULWWHQ
 K ,PSD.FQDPDWK)DOOV
 K ,GHQWLILFDWLRQ
 K &RQWH[WV
 L ,QGHSHQGHHQ:WZH DUQLQJ
 L pL

,QGLUHFWSVVHVPHQWV

,Q DGGLWLRQ WR GLUHFWDVVHVPHQW PHDVXUHV WKH VWX
VHVHVG WKURXJK DVHQLRU H[LW VXUYH\ 6HQLRU ([LW 6XUYH
7KH ² GDWDFROOHFWHGLQVSULQJ ZDVXVHGLQWKL
RIVSULQJ WKURXJKVSULQJ 7KH ² VXUYH\FRYHU

pKø\URILgL)LJG RU%(7
WKH 6)L@LRU (.Lx 6XUYH\

2

)LJXUH HOI DVVHV VPHQW RI SURILFLHQF\ DW \$(7 RXWFRPHVE
([LW 6XUYH\ 2 2QH VWXGHQW GLG QRW UHVSRRG WR WKH
UDU\,VVXHV

)LJXUH

&KDQJHV 5HVXOWLQJ IURP \$VVHVVPHQW

7KLV VHFWRU GHVFULEHV WKH FKDQJHV UHVXOWLQJ IURP W
DFDGHPLF\HDU ² ,WLQFOXGHV DQ\FKDQJHV WKDW KDYH
SUHYLRXV DVVHVVPHQW F\FOHV IURP WKLW RU ODVW\HDU D
F\FOH

7KH %6((IDFXOW\PHWRQ 2FWREHU WR UHYLHZ WKH DVV
DQ\FKDQJHV DUH QHHGHG WR WKH %6((FXUULFXOXP RU DVV
SUHVHQWHG LQ WKLW GRFXPHQW 7KH REMHFWRU VHW E\WK
VWXGHQWV SHUIRUP DW WKH OHYHO RIDFFRPSOLVKHG RU H[H
RXWFRPHV 7DEOH UHIVXPPDU\SURYLGHV DVXPPDU\RIWKH
VKRZV KRZ WKHVH DVVHVVPHQWV UHODWH WR WKRVH IURP SU

7KH UHVXOWV RIWKH ² DVVHVVPHQW LQGLFDWH WKDW W
ZDV QRW PHWRQ HYHU\SHUIRUPDQFH FULWHULRQ IRU HYH

5HFRPPHQGDWLRQ

2XWFRPH M &RQWHPSRUDU\,VVXHV

5HVXOWWGLUHFW DVVHVVP HQW UHVXOWV RI WKLV RXWFRPH UH
FULWHULD 7KHLQGLUHFW DVVHVVP HQW LQGLFDWHG WKDW
3URILFLHQWµ DW D NQRZOHGJH RI FRQWHPSRUDU\LVVXHV

5HFRPPHQGTWHLQDUHFW DVVHVVP HQW RI WKLV RXWFRPH ZDV
FKDQJHV LPSOHPHQWHG E\WKHIDFXOW\IROORZLQJ ODVW
DOVR DFNQRZOHGJHG WKDW WKH VWXGHQWV IHHO OHVV FR