

,QWHJUDWLQJ LGHRORJLFDOS B QIGU S R OIOWH FYLO WLCXQF SWORQLHV D
HOHPHQWV LQWIFKQV VURRU S/B H B WMLRQJ WKH H H DFOIB VVM K PD W H R L V L
LGHRORJLFDQ DQG SROLWLFDO HFOVFD/W LRFQ WHLOH H H HFOVQ VVIFDFULW H K P Q
LQWR FODVVURRFX JKH B FIKUQ V W M BOW BDFIKOQQJ 7KH FRPPRQO\ XVHG D
PHWKRGV VXFK DV FUHDWLQJ YD V H H W X B UPHQW V & D Q G D S Q R B S H P D P R C
VLWXDWLRQV EDVHG RQ GLVFLSOLFOLDLR Q Q R Z I O H H G M H V F R A K W H H Q W Q L L Q
HQDEOHV VWXGHQW W H W L R G H U R G R J O D V O U W E K W H L N W O H F W L R Q 7 K H * L Q L
PHWKRGRORJLHV YDOXHV H W F F E P I R Q Q \ V K H H G S L R Q G H F D W R L Q G L Q W H U
NQRZOHGJH LQ WKH SURFHVV RI W L Q F R N I H Q G I D V G S I S U R E O F R Q R O M V Q G H Q W
XOWLPDWHO\ DFKLHYLQJ YDOXH 6 W L G V D I Q F H I U R P W W L X G I S Q W W L Q V K H F X
FODVVURR P @ W H D F K L Q J W K H F R X Q W U \ V S R Y H U W \ D O O H Y L D W L R

&DVH 'XULQJ WKH WHDFKLQJ RI 8 Q D W J H V B D Q G S R Y H U W \ D O O H Y L D W L R
3URFHVV LQJ D D Z H E V F U D Z O Z H U V F L Q W X B G O F H G W R R X Q G H U V W D Q G W K H Q D
LQVWLOO LQ VWXGHQWV D V H Q V H I L R I P F E R F O S L H I D Q F M X S I S W K I W O I J D O D W L F
UHJXODWLRQV ,Q WKH HUD RI ELJ G D W D O Z I W L R U D Z O L Q V H V U R Q W L Q J , G I
WKH FRPPRQ Z D \ W R R E W D L Q S X E O L F H G D W D L Q V G L W H D F H H Q J W R K H Q Y
DXWRPDWHG SURJUDP VFULSW W K D F W H Y W W D I W W Z R E O G D M X G U F F R A K G L Q J H
WR FHUWDLQ UXOHV :H E F U D Z O H E R W E K U M K H J S I H B F H V F R Q D Y H Q W H I Q F H U H W R X O
GDWD PLQLQJ EXW ZKHQ XVHG I P Y S U R X S H W L O R Q W I K H \ D P O \ H S R H V F W L Y H P H
ULVNV RI YLRODWLQJ ODZV D Q G H I U H H F W O D M Q L R Q W R I V K G K R D R J Q R D O D Q G
FRPSO\LQJ ZLWK FUDZOHU SURWRFRLOWH F E W Z H L O O Q D N V D R F V I H W L X I B B Z K
LQIRUPDWLRQ WKURXJK ORQJ D Q F R X Q D M H U R Z H I U R D W L R D V X D F K L J H W K H W K H
REWDLQH G L Q I R U P D W L R Q I R U L O O V H I D F K M Q U D Q Y D G W A D R Q D Q R G I S F O W L R O R M L O
D Q G Y L R O D W L Q J S U R I H V V L R Q D O H W K W K V V % F R X V I V O W K V K I E R D F Z G H H W L X G \ F
VWXGHQWV FDQ XQGHUVWDQG W K H Y D W O X H F W Q R Q Z I \ R X W W F S R I X K E F D I U H Q K H J F
VZRUG D Q G R Q O \ E \ X V L Q J L W F R U F R P W I Q L F D J Q I H Y I K O X D W D L R I Q H D Z L M U K
L P S D F W 7 K L V K H O S V W R L Q V W L F R P S I Q V H O V F L G H V Q W K D V W W Q G H Q R M V S R
FRPSOLDQFH Z L W K R Q H J D P R W D H Q X F D Q V F R L R E K L Q L Q V H Y D O X D W L R Q Z L W K W K H
D Q G F R U U H F W S U R I H V V L R Q D O H W K R Q W U L E X W L R Q W R V R F L H W \ R I J U D G
&DVH :KHQ WHDFKLQJ WKH F W R S B E K W Q R Q Y H & B X D O X I D W L R Q R I W K
&ODVVILFDWLRQ D F D V H V W X G W K R Q L V G K H R O B O L F B B H D I Q G L H S R W L W L F D O
LQWURGXFHG WR KHOS VWXGHQW W R X O F I D V Q K R Z R X M Q W D K E O A R X Q W U \ V

Table 2. &RXUVH ,GHRORJ\ DQG 3ROLWLFV ,PSOHPHQWDWLRQ (Y

Evaluation indicators	Evaluation time points	Evaluation methods	Evaluation purposes
SURIHVVL FRPSHWH	2UGLQDUY RSDDFWLFDO SHUIRUPD DQG ULOO	5HDIQGDU DVVHVVPHQW SHUIRUPD SURMHFWV DQGDVVHVVPHQW IL	DWWHQGDQFH QFRHQW D Q R S U D E W S E B O H P H Q V RI FRXUVH REMHFWLYHV QDO H[D
RFFXSDW FRPSHWH	LQDQGH FUDGXDWL	*UDGXDW H VXUYHIV L R U X P V W K L U G S D U W I P H W K R G V	HPSOHLQ R X X U Y I P S U R Y H P H Q V H R I D O U X D G W L R Q L R Q D Q G T R X W K H B H D Q G H G X F D W L R Q D O J R D O V
6RFLDO &RQWULE)LYH XULQJ	*UDGXDW H VXUYHIV L R U X P V W K L U G S D U W I P H W K R G V	HPSOHLQ R X X U Y I P S U R Y H P H Q V H R I D O U X D G W L R Q L R Q D Q G T R X W K H B H D Q G H G X F D W L R Q D O J R D O V

,PSOHPHQWDWLRQ (IHFWLYHQHV RI WKH
&XUULFXOXP
EDVHG WHDFKLQJ H K H Q R M G R F H S I V O H I
SURIHVVLRODQ NQRZOHGJH KHOSLQ
(GXFDWLRQ H I I H F W L Y H O \ L Q W H U D Y H E J D Q G S O H D V D Q D W P R V S K
SROLWLFDO HOHPHQWV F I Q L O R I S U R S A R L F S R H B O Q J L G H R O R J L F D O D Q G S
FRXUVHV D Q G D F K L H Y L Q J W K H R I D O L F J D R O L F G Q B W K R Q R U Y D O X H U V W D
JXLGDQFH D Q G S U R I H V V L R Q D O N Q R Z O H G J H G L V F L P L D W L R Q Y D O
H I I H F W L Y H P H D Q W L R I J K F O G W H L O K D X L Q L W W K H L U W K L Q N L Q J G X U L Q J W K H
W D O H Q W V I R U @ S M V H H F R D X Q H D U A R I L G H R O R J L F D O D Q G N Q R Z O H G J H L Q W H U Q D
SROLWLFDO L P S O H P H Q W D W L R Q L W G E D Q H I H U D D O L L Q J W K R P S L Q H G W K H L
W U D G L W L R Q D O W H D F R X Q W H P W W B W G M P L S R U D W H V
L G H R O R J L F D O D Q G S R O L W L F D O H K D Y H E H H Q J U H D W O A H G L P S U R Y H G F U H

OHDUQLQJ EHLQJ DEOH WR OHD DQ HDQ GD Q GRZL CHU YHFRZ W W LQXHO D BHOFR F
,Q WHUPV RI LGHRORJ\ WKURXJKV WFKWVORUDRO LJKD DQMSFMBDQO WFKWV B LGH
VKDSLQJ QDWLRQDO LGHQWLW\ B QGRQDMWRQDO SULGH KDYH EHHQ
HQQDQFHG WKH ZRUOG KDV EHHQ XQGHUVWRRG &KLQD KDV EHHQ
UHFRJQLJHG DQG QDWLRQDO VHOI FRQILGHQFH DQG VRFLDO
UHVSRQVLELQW\ KDYH EHHQ VWUHQJWKHQHG

7KH SDVVLQJ UDWL ZDV , Q WKH SDSHU WZDV VHPHYWHU RI ,QG XV
WKH DFDGHP LF \HDU D WR FROODERUDWLYXGH QWYFZHWLRO SURMI
HQUROOHG LQ WKLV FRXUVH 7KH QXPWLRU IR VWXGHQWV 6LFKXDQ
SDVVHG WKH ILQDO H[DP ZDV (GXFDWLRQ SDV UDWH RI
ZKLFK LV KLJKHU WKDQ WKH VDPH SHURQ ODVW DFDGHP 3URMHFW
\HDU ZHOORQRZG EUDQG FRXUVH ;5 \$\$\$OL

2YHU SHRSBG SQ UWRIFLDSO SUDFWLFH ,Q
WKH DFDGHP LF \HDU RI 5 NYHW HQ FHWXGHQWV
SDUWLFLSDWHG LQ WKH 7KUHH 9LOODJHV 6XSSRUW DFWLYLW\ DQ
LQFUHDVH RI FRSRUWH XWRDWDG=KDQJ 'DOLDQJ &XUULFXOXP LGHRO
7HDFKHUV WHDFKLQJ DQG VFLIXQGDPHQWDO SULQFLSOH R D V PRUD
EHHQ LPSURYHG %DVHG RQ WKH HUD>-@ &KLQD +LJKHU (GXFDWLRQ
DQG SROLWLFDO HGXFDWLRQ LQ W LV FRXUVH WKH WHDFKLQJ WHDP
KDV EHHQ DSSURYHG IRU RQH VFKR=KDQJ -LQJ]RQJ 7KH H[SORUDWLRQ
DQG SROLWLFDO SURMHFW WKUHLGHRORJLFDQ DQG SROLWLFDO R H B
SURMHFWV DQG KDV SXEOLVKHG WHDFKLQJ RI H V V Q R G D D Q F R S U R I H V
UHIRUP \$GGLWLRQDO\ WKLV FRXUVH 6XUYH\LQJ VHULHV R V F R X
VFKRRO OHYHO EUDQGHG FRXUVH >-@ (GXFDWLRQ R D Q G WHDFKLQ

&RQFOXVLRQV

&XOWLYDWLQJ YLUWXH DQG HGXFDV SROLWLFDO HGXFDWLRQ LQ FROOHJ
PLVLRQ RI HGXFDWLRQ 7R JXLGH VWUDWHJLF \$KLUQSHFWLKHU D Q XFD
YDOXH RI FRQWHP SRUDU\ FROOHJ 1R LW LV QRW HQRXJK
WR UHO\ VROHO\ RQ FRXUVHV LQ LG:DQJ 4LDQ +H +DLWDR :DQJ) VFKRRO
DV LQ WUDGLWLRQDO WHDFKLQJ 3UDFWLFH RI ,GHRORJLFDQ DQG 3R
HIIHFWLYHO\ LQ W W ZLDWKHG W K F I V S O Y L 'DWD 0LQLQJ DQG .QRZOHGJH 'LV
%\ GHQYLQJ LQWR WKH LGHRORJL >-@ 7HDFKLQJ 5HVHDUHQPHQWV
HPEGGHG LQ SURIHVVLRQDO FRXUVH=KRX =KRQJOLDQJ \$\$\$OLFDFWLRQ RI
WUDLQLQJ REMHFWLYHV RI WDOH LQ WUHQQ SUHGLFWLRQ RI H T X L S P
NQRZOHGJH DQG PDVWHULQJ VNLO &RQWHP SRUDU\ 3HWUROHXP DQG 3
WKDW XQLLHV D Q K Y D Q R Z O H G K H V
V\QHUVLWLF HIIHFW EHWZHHQ NQRVORZH G V V H P I O D W I R O D Q G
YDOXH JXLGDQFH ZKLFK LV PRUH F /X R /DLSHQJ ([SORUDWLRQ D Q G 3 U D
IXQGDPHQWDO PLVLRQ RI FROOH D Q G 3 R O L W L F D O 7 H D F K L Q J , R ' D W
FXOWLYDWH YLUWXH D Q G H G X F D W H & R P S X W H U D Q G , Q I R U P D W L R Q 7 H

7KLV SDSHU WDNHV WKH FRXUVH L LQLQJ DQG DQDO\VLV
DV DQ H[DP SOH XSKROGLQJ WKH ;LRQJ /DLFKHQJ ([SORUDWLRQ D Q G D Q
SROLWLFDO HGXFDWLRQ LQ WKH F ,GHRORJLFDQ DQG 3R O L W L F D O D Q G X F
FRXUVH LGHRORJ\ D Q G S R O L W L F D & R P S X W H U 1 H V Z W L R Q) R X Q @ R Q
VWUDWHJ\ EDVHG RQ RQH IRXQGDV &RPPXQLFDWLRQ .UHPHQWV
DQG IRXU LQWHJUDWLRQV)URP V + D Q ; L D Q J K R X \$ Q D O \ V L V R I V H X U U L
REMHFWLYHV WHDFKLQJ GHVLJQ D Q G S R O L W L F D O P H W K R G R O R Q G 7
WHDFKLQJ HYDOXDWLRQ WKLV VW 8 Q L Y H U V L W \ D V D Q H [D P S O H D Q G - R
H[SORUDWLRQ GHQYLQJ LQWR WK 8 Q L Y H U V L W \ + X P D Q L W L H V \ D Q G
HOHPHQWV WKDW W W K U G L V G F W S O L D W H (G L W L R Q
7KH SDSHU DOVR FDUHIXOO\ GHVLJQ 6 K D R 4 L D Q / L X < X Q = K D Q J = L H R
HGXFDWLRQ FDUH Y D U L G R X W W D Q G K V 3 U D F W L F D O U H V H D U F K R Q W K H L Q
WR LQWHJUDWH LGHRORJLFDQ D Q G D Q G S R O L W L F D O H O P H Q W V L Q W R
FRXUVH \$GGLWLRQDO\ WKH SD: D Q G S R O L W L F D O H O P H Q W V L Q W R
HYDOXDWLRQ PHWKRGV WR SURPRV KLJKHU YRFDWLRQDO FROOHJHV IU
HGXFDWLRQ LPSURYH VWXGHQW\ SRVW FODVV F W S L F W D W L R Q G F I L
HQQDQFH WKH Q R Z O R I G H M D R Q D N N O F R Q V X O W L Q J H G X F D W L R Q D O U H V H I
WKHLU SDWULRWLVP KHOS WKHP H ' X D Q : H L M L H < D R / L J H = K D Q J : H Q P L
OLIH YDOXH D Q G S H U V R Q D O Y D O , Q Q R Y D W L R Q D Q G S U D F W L F H R B J H

FXUULFXOXP LGHRORJLFDO DQG SROLWLFDO FRQVWUXFWLRQ
PRGH>-@ ,QGXVWULDO WHFKQRORJ\ DQG YRFDWLRQDO
HGXFDWLRQ
/L 5XLTQ 5H XQGHUVWDQGLQJ RI WKH HIIHFWLYH
SURPRWLRQ RI FXUULFXOXP LGHRORJLFDO DQG SROLWLFDO
HGXFDWLRQ LQ FROOHJHV DQG XQLYHUVLWLHV LQ WKH QHZ HUD
7DNLQJ WKH XSUULFXOXP LGHRORJLFDO DQG
SROLWLFDO HGXFDWLRQ LQ LQWHUQDWLRQDO HFRQRPLFV DV DQ
H[DPSOH>-@ &KHLQVLM\ 87HIDFKLQJ

/LX <X 6XUSULVH DQG GHYHORSPHQW RSSRUWXQLWLHV DQG
FKDOOHQJHV>-@ 6WXG\ DEURDG
:DQJ /LQJOLQJ ;X 'H\ 5HVHDFK RQ WKH LQWHJUDWLRQ
RI LGHRORJLFDO DQG SROLWLFDO HGXFDWLRQ LQWR GDWD
PLQLQJ DQG PDFKLQH OHDUQLQJ WHDFKLQJ>-@ 0RGHUQ
YRFDWLRQDO HGXFDWLRQ
:DQJ &KXDQZHQ %DR <RQJ]KDQ &KHQ)X[LQJ -LQJ
&XL &XL -LDQFKDR 4LQ -LDQKXD =KDR <XHODQ
([SORUDWLRQ DQG SUDFWLFH RI LGHRORJLFDO DQG SROLWLFDO
HGXFDWLRQ LQ DQLPDO SDUDVLWRORJ\ WHDFKLQJ
>-@ &RQWHPSRUDU\ DQLPDO KXVEDQGU\
/LX 'H\ DQJ <DR :HL =KHQJ ;LQ &RPSXWHU 9LVLRQ
FRXUVH LGHRORJLFDO DQG SROLWLFDO WHDFKLQJ
UHVHDFK>-@ -RXUQDO RI \$QTLQJ 1RUPDO 8QLYHUVLW\
1DWXUDO 6FLHQFH (GLWLRQ