

&RQVWUXFWLRQ DQG WJ&KORUSDWDRQVIRFDOR
IRU FRXUVH EDVHG LGHRORJLFDQ DQG
XQGHUJUDGXDWHR&BFTDOWLRIDQG VDIHW\

*DRIHQJ <XDQ

&ROOHJH RI)RRG=DKMLDQGLZFLQDQ 8DQYHUVLV&KL&CRXVK

\$EVWUDKFW SUDFWLFDQ WRLDFFRXLQVH\&DWHPG ISRCHLWOLFJLQDQDQDQGLRQ
XQGHUJUDGXDW VSHFLDOW\ RI IRURGLWXZOHUM\ FRQQ\ WD KFWAHGQDRXUHX
WUDLQLQJ REMHFWLYHV DQG SODQV&DRJRSWQPDQHG SRQ&HWSLW&DQVSLDR
V\WHP ZLWK WZR GLPHQVLRQV DQSD&FURZDWHVBYRIU&H&H&K&HR LQWL&R&H
LGHRORJLFDQ DQG SROLWLFDO HQWPHZOWVHDSORLW&F&W&L&D&H&W&H&F&K&D
SRVLWLYH UHVXOWV ,Q RUGHU WFRIRW&R&H&V&D&Q&H&G&H&G&L&F&S&W&R&H&V&D&R&Q
FXOWLYDWLRQ RI SURIHVVLRQDOWLQ&R&X&D&W&L&Q&H&D&R&L&D&S&D&G&H&S&D&R&W&L&Q&H
DUH UHTXLUHG

,QWURGXFWRQ

)RRG VDIHW\ LV WKH WRS SULRULW\ 3UHVVHQW V\W&X&D&W&L&R&Q WKH RI &
FRQLQXR&XV GHYHORS&PHQW RI WKHSHR&SOH&L&W&K&WKH
KDYH SX IRUZDUG KLJKHU UHTXLUHPHQWV IRU IRRG VDIHW\ DQG
KHDOWK\ HDWLQJ 7R DGDSW WR WKH HFROR&PL&F&GHYHORS&PHQW LW
LV QHFHVVDU\ WR FXOWLYDWH IRRG IXDOLW\ DQG VDIHW\
SURIHVVLRQDOV WKDW PHHW VR&D&D&Q&H&H&K&H&V&W&K&L&N&G&H&S&D&R&W&L&Q&H
XQLYHUVLVWLHV WR XQL\ PRUDOR&H&X&E&Q&W&R&R&R&D&Q&L&E&D&H&R&X&H&W&X&D&Q&H
HG&X&F&D&W&L&R&Q LQ WKH&R&W&K&S&V&F&R&Q&H&F&O&S&R&V&L&R&R&L&F&D&O WKH&R&U\ FRXUVHV +
DQG WR FXOWLYDWH PRUDOLW\ D&D&C&H&W&D&P&H&Q&W&L&Y&Q&W&D&R&Q JR&D&S&H&F&W&X&C
LQFOXGLQJ WKH HQWLUH VWDII R&W&K&K&H&Q&W&L&D&H&K&S&Q&R&R&H&V&W&K&H&D&R&G&H&W&D&O
DVSHF&W&V > @ 3HUVLVWLQJ LQ OH&D&S&U&L&Q&H&Q&W&R&P&S&U&D&E&W&L&F&S&D&Q&W&K&H
SHR&SOH LV WKH RQO\ ZD\ IRU FR&Q&H&U&H&P&V&X&C&H&O&W&D&G&W&R&U&W&R&H&F&D&R&X&S
EHFRPH VXFFHVVIXO VLJQLILFDQFH LQ DSSOLHG XQGHUJUD
([SORUDWLRQ DQG UHIRUP KDYH SUHYLR&X&V\ FDUULHG RXW
LQ WKH WHDFKLQJ FRQWHQW WHDFKLQJ PHW&K&R&G&V DQG
DVVHVVPHQW V\WHP RI WKH WKH&R&U&H&W&L&F&D&O D&Q&G&H&S&H&U&L&P&H&Q&W&D&S&O&H&P
FRXUVHV LQ IRRG UHODWHG PDM&R&V\ ZKLFK PRELOLJHG VWXGHQWV
HQW&K&X&VLDVP DQG LQLWLDWLYH LQ SH&U&L&P&H&Q&W&D&S&O&H&P
FODVVURRP WHDFKLQJLHV D&Q&G&Y&S&R&R&R&W&H&G&W&K&H&R&O&F&D&P&S&X&V ODERUDW
GHYHORS&PHQW RI FODVVURRP H&G&X&E&D&W&L&R&Q&S&Y&H&O&L&W&L&D&Q&G&W&H&D&F&K&L&Q
FRQQRWDWLRQ ,Q WKH SUHYLR&X&V D&G&S&H&U&L&P&H&Q&W&D&S&O&H&P
LGHRORJLFDQ DQG SROLWLFDO HQW&P&H&Z&O&V&R&Q&S&O&D&Y&H&E&H&H&O&R&Q&D&O
HVWDEOLVKHG +RZHYHU WKH&U&H&R&P&H&V&D&O&D&W&R&H&O&D&Y&S&H&E&W&V&L&W
SUREOHPV WR EH VROYHG LQ WKH&L&H&P&O&H&W&D&Y&K&R&H&Y&H&F&R&Y&H&U&D
EDVHG LGHRORJLFDQ DQG SROLWLFDO HQ&X&T&L&W&H&Q&W&D&S&D&Q&G&S&U&D&F&W
XQGHUJUDGXDW VSHFLDOW\ RI IR&S&O&H&Q&W&L&X&O&H&O&H&P&H&Q&W&V RI &,3(+RZH
XQLYHUVLVW\ WHDFKLQJ WKHVH HOHPHQWV RI&W&H&Q
FHUWDLQ FKDSWHU RU VSHFLILF NQR
GLILFXOW WR D&W&D&L&Q WKH RUJDQL
DQG SROLWLFDO FRQWHQW DQG SU
FXUULFX&O&P > @,37&K&H&U&H&G&R&I&W&H&F&X&O&W W
V\QHUJLVWLF HIIHF&W&V ZLWK LGHRORJ

1.2.1. The professional & cognitive practice module

H[SHULPHQWDO DQG SUDFWLFDQ FRXUVHV
 7KH SURIHVVLRQDO FRJQLWLYH SUD
 7KH DLP RI H[SHULPHQWDO DQG FRXUVHV HLW WKH HDW 6RFDW DQG)RR
 FXOWLYDWH DQG WUDLQ WKH VWXGHQWV WLRQ[S HULPHQW DOKRSHUIURW KR
 DELOLW\ DQG SURIHVVLRQDO VNRXQV V\XGHQWV SURPRWH W
 LGHRORJLFDO DQG SROLWLFDO FRXUVHV RIR H[SODLQDQG W\HDQSRSO
 SUDFWLFDQ FRXUVHV ZDV QRW H[SRQH DQG WKH RIR RNVH W\HDQSRSO
 FRQWHQW WHDFKLQJ PHWKRGV DQG DXVGHVPHWV XGHQWV RIR RNVH
 PDMRU KDYH EHQH[SRH BGLQWKH QDDWLRQDO FRQGLWLRQV DQG FX
 VWDJH DQG PXOWLSOH UHODWLYH GLVFDQVWV DQG DQG SRSDWLFHQ
 WHDFKLQJ SODQV KDYH EHQ FKDWLDEOLMKNKURXOK KKHG\ZRUN 7K
 H[SORUDWLRQV DQG UHIRUPV DUFORVH W\WHHGDWLRQJ RYDURRQDO SU
 FRXUVHV \$ V\WHPDWLF V\WHPH[SRQV RIR RNVH W\WHHGDWLRQV DQG JR GH
 WKHUH LV D ODFN RI FRRUGLQDWLRQ SDUDWLRQV WKH RIR RNVH W\WHHGDWLRQV
 ZLWKLQ WKH FXUULFXOXP V\WHPH[SRQV W\WHHGDWLRQV W\WHHGDWLRQV DQG H
 DFKLHYH WKH GLYLVLQR RI ODFN W\WHHGDWLRQV W\WHHGDWLRQV W\WHHGDWLRQV
 HGXFDFWLRQ VWXGHQWV RI YDULRXV W\WHHGDWLRQV W\WHHGDWLRQV W\WHHGDWLRQV
 7KHUHIRUH LW LV QHFHVVDU\ WR RIR RNVH W\WHHGDWLRQV W\WHHGDWLRQV W\WHHGDWLRQV
 DQG SROLWLFDO DVSHFWV RI H[SHULPHQWDO DQG SUDFWLFDQ WHDFKLQJ V\WHP
 FRXUVHV DQG WR FRQVWUXFW D SUDFWLFDQ WHDFKLQJ V\WHP
 ZLWK WZR GLPHQVRSURH W\WHHGDWLRQV SURJUHVVLYH
 OHYHO IRU &,3(LQ RXU PDMRU

3.2.2. The professional skills practice module

([SORUDWLRQ VWUDWHJLHV

7R RSWLPL]H WUDLQLQJ REMHFWLYHV
 7DNLQJ WKH UHYLVRQ RI WKH SURJUDPPV WUDLQLQJ WUDLQLQJ WUDLQLQJ
 DQG WHDFKLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 ZH RSWLPL]HG WKH WUDLQLQJ REMHFWLYHV WUDLQLQJ WUDLQLQJ WUDLQLQJ
 H[SHULPHQWDO DQG SUDFWLFDQ FRXUVHV WUDLQLQJ WUDLQLQJ WUDLQLQJ
 H[SHULPHQWDO DQG SUDFWLFDQ FRXUVHV WUDLQLQJ WUDLQLQJ WUDLQLQJ
 3URIHVVRQDO /DERU DQG 6RFDW WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 WUDLQLQJ SURJUDPPV RI RXU PDMRU WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 VWXGHQWV WR JR GHHS LQWR WKH WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 QDWLRQDO FRQGLWLRQV VHUH WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 DELOLWLYH DQG HQKDQFH WKH WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 VRFLDOLVW PRGHUQL]DWLRQ FRXUVHV WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 FRXUVHV FRXOG SURPRWH WKH WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 SUDFWLFDQ DFWLYLWLYH DQG LGHRORJLFDO DQG SUDFWLFDQ WUDLQLQJ WUDLQLQJ
 ,3(PRGXOH DUH SDWULRWLVP

3.2.3. Comprehensive practical training module

7R FRQVWUXFW D SUDFWLFDQ WHDFKLQJ V\WHP
 ZLWK WZR GLPHQVRSURH W\WHHGDWLRQV SURJUHVVLYH OHYHOV RI
 WLPH DQG VDFH IRU &,3(7KLV PRGXOH RIIHUV FRXUVHV VXFK
 %DVHG RQ WKH WUDLQLQJ SODQ WUDLQLQJ DQG 3URIHVVRQDO &RP
 WKH V\WHP IRU H[SHULPHQWDO DQG SUDFWLFDQ FRXUVHV WUDLQLQJ WUDLQLQJ
 GLYLGH LQWR ILYH PRGXOHV VXFK DV SUDFWLFDQ DQG SUDFWLFDQ WUDLQLQJ
 SUDFWLFDQ PRGXOH SURIHVVLRQDO WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 FRPSUHKHQVLYH SUDFWLFDQ WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 LQWHUQVLS DQG JUDGDWLRQ WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 DQG HQWUHSUHQHUVKLS DELOLWLYH WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 H[SHULPHQWDO WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 OHDUQ NQRZOHGJH IURP VKDOO SURJUDPPV WUDLQLQJ WUDLQLQJ WUDLQLQJ
 FXWWLQJ HGJH > @ 7KH LGHRORJLFDO WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 WKH FXUULFXOXP LV SURYLGHG WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 WKH VSLULW RI LGHRORJLFDO WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ
 DQG DFWLRQ DQG LQRYDWLYH WUDLQLQJ WUDLQLQJ WUDLQLQJ WUDLQLQJ

SODQV WDNLQJ LQWR DFFRXQW IDFWRRVDFXFKH DW WRKHHWUJ BBDW WIKV
VDIHW\ ODZ FXOWXUH DQG WKHGHGRYLRURGDQDQ G7SRDXJKL FDKH HOHP
HVWDEOLVKPHQW RIWBIQWHSV WGGFK\$Q3FRQWHQW
V\ VWHP VWXGHQWV DUH IDPLOLDULJHG ZLWK WKH QDWLRQDO IRRG
SURGXFWLRQ GHVLJQ TXDOLW\ ZDQWKHDFWL V QGFRQFWLRQWVQWDFKLV
VWDQGDUG V\ VWHP HQDEOLQJIRWKRPH &R(HQHSHLVPHQWDO DQG
FRPPXQLFDWH ZLWK FODVVPDWHVSDQFHGQWKRUVFRXVWUJFRWRQ SDW
FDPSXV LQWHUQVKLSV DQG RQ FDPXVLFHQWLFHQWV
7KH NH\ LGHRORJLFDO DQG SROLWLFDOJRWKIVWHDFKLQJ VIOODE
PRGXOH LQFOXGH SURIHVVLRQDQDQVLRQWDFWLQRFVDFKLFQJ PH
UHVSRQVLELOLW\ OHJDO DZDUHQWDFKQWDFRZVWV VR DV WR WU
HQWLUH SURFHVV RI WDOHQW FXOV
HQJLQHHULQJ

3.2.4. Internship and graduation thesis module

7KLV PRGXOH FRXUVHV LQFOXGH 3.3.1 To optimize the teaching outline and training
*UDGXDWLRQ , QWHUQVKLSV DQ Grogred of practical and experimental courses WKLW
WHDFKLQJ SURFLWVSDDQVWHQWLVLRQH QJWKHQLQJ
VWXGHQWV XQGHUVDQGLQJ R7DNHQW WKH GHYHVSRRVWKKH WUDLQJ
DZDUHQHVV FXOWLYDWLQJ WKH SURJUDG DQG WHDFKLQJ RSDOLXQJ
VWUHQJWKHQLQJ WKH WUDLQLQJ RSWLPHJRWVWVWLVWDFKLFQJ
DQG SROLWLFDO HOHPHQWV DUH HSHULPHQWDO FRXVWUJHQWDFWLQJ
WHDFKLQJ ,W ZLQVFXSURJYDWHRQVXGHHWKLFV
DQG VFLHQWLILF VSLULW > @
7KH NH\ LGHRORJLFDO DQG SROLWLFDOJRWKIVWHDFKLQJ VIOODE
PRGXOH DUH GRRQDFDQVLRQWDFWLQRFVDFKLFQJ PH
FUDIWVPDQVKLS DQG HQYLURQPHQWDFKQWDFRZVWV VR DV WR WU
HQWLUH SURFHVV RI WDOHQW FXOV
HQJLQHHULQJ

3.2.5. Innovation and entrepreneurship ability module

7KLV PRGXOH FRXUVHV LQFOXGH 3.3.2 To innovate teaching methods and gradually
LQQRDYLWRQ DQG HQWUHSUHQHXPVWHRESLQWDLQDQVLRQJLQDPWKDWGLQV
HQWUHSUHQHXPVKLS LQFXEDWLRQDQ GZRUPFWLXQV WKKZHQJ DWKFRPSU
HQWLUH IRXU\ HDU XQGHUJUDGXDWLFXVGHURQJRWVWLVWDFKLFQJ
DUH HQFRXUDJHG WR SDUWLFZHWLWDEQDQVLRQWDFWLQJ RSDOLXQJ
WHFKQRORJLFDO LQQRDYLWRQ FDPXVLFHQWLFHQWV
FRPSHWLWLRQV VFLHQWLILF UHVHDFK WUDLQLQJ LQGXXWU\
FHUWLILFDWHV HWF 7KHVH DUH 3.3.3 To enhance teachers' ability for the CPE
XQGHUJUDGXDWV VWXGHQWV LQQRDYLWRQ SUDFWLFH %\ XWLOLJLQJ
WKH SODWIRUP DQG SROLFLHV RQ WKH SURFHJRWVWLVWDFKLFQJ
HQFRXUDJHG WR DSSO\ IRU WKHZHWLWLRQDQVLRQJLQDPWKDWGLQV
,QQRDYLWRQ DQG (QWUHSUHQHXPVWHRESLQWDLQDQVLRQJLQDPWKDWGLQV
3URYLQFH 1HZ HQVDFR6XSRUW SURJYDWHRQDQWDOHQW FXOWLYDWL
H[WUDFXUULFXOWHFKFRGHFRJLFFDQVLRQWDFWLQJ WKKH SROLWLFDO KHLJKW
FROOHJH VWXGHQWV HQVDFR6XSRUW SURJYDWHRQDQWDOHQW FXOWLYDWL
HWF 7KURXJK YDFKLDXV SURJYDWHRQDQVLRQWDFWLQJ D SUDFWLFDO WHDF
SURMHFW DSSURYDO LPSOHPHQWIRVLRQLDQVLRQWDFWLQJ SURIH
DFTXLVLWLRQ VWXGHQWV FDQ XGHUWDEQDQVLRQWDFWLQJ WKKH SROLWLFDO KHLJKW
VFLHQWLILF UHVHDFK DQG PRUFRXVLRQVWLVWDFKLFQJ PH
DELOLW\ WR LQGHSHQGHQWOLVLRQVXGHHWKLFV
VXPPDULJHQDQVLRQV SUREOHPV
7KLV PRGXOH HQFRXUDJHV VWXGHQWV WR DEWLYHO\
SDUWLFSDWH LQ LQQRDYLWRQ DQ G HQWUHSUHQHXPVKLS
FRPSHWLWLRQV DQG VXEMHFW FRPSHWLWLRQV FXOWLYDWLQJ WKKH
VSLULW DQG DELOLW\ RI GHHS DQVLRQWDFWLQJ WKKH SROLWLFDO KHLJKW
LQQRDYLWRQ
\HDUV WKH WHDFKIRVLRQLQVPHRZRQ V
DZDUGV VXFK DV WKH 6HFRQG 3ULJH
&DVHV RI ,3(LQ =KHMLDQJ 3URYLQ
SURIHVVURUV DQG DVVRFLDWH SURIH
DV WKH ILUVV ZLQGHUV DQG KDYH
SURMHFWV VXFK ,3(LQ =KHMLDQJ

HGXFDWLRQ &RXUVHV ,QG XVWU\ *8Q)LYHU VLWQ 5H;VH?U FK) D Q J -
 3URMHFWV RI WKH 0LQLVWU\ RI (GKFDWLRQ)LRV &GLWLRQDQG
 =KHMLDQJ 3URYLQFLDO 9LUWXDO 6LPPQDWLRQ = (SDFWLRQ) %UDX
 7HDFKLQJ 5HFRPPHQGDWLRQ 3URMHFWV XEHW W \$GDFKIUVROR (GXF
 RXU PDMRU KDYH XQGHUWDNHQ WDVNV WRUHIRUP DQG H[SORUH
 WKH FXUULFXOXP \VWHP DQG WDOHQWDFXOWLYDWLRQ PRGH WR
 UHIRUP WKRIWBRORJLFDOLFDQG FRXUVHV (FRQ (GXF 5HY
 ,Q UHFHQW \HDV FRXUVV PDMRUHGKDJURXS RI
 RXWVWDQGLQJ SURIHVVLRQDOV ZLWK FRPSUHKKHQVLYH
 GHYHORSHPHQW LQ PRUDOLW\ LQWHOOLJHQFH SK\VLFDO ILWQHVV
 DHVWKHWHLFV DQG ODERU 6WXGHQWV KDYH D VWURQJ VHQVH RI
 VRFLDO UHVSQRVLELWLW\ DQG JRRG SURIHVVLRQDO HWKLFV
 6WXGHQWV KDYH VWURQJ LQQRYDWLRQ VSLULW DQG SUDFWLFDO
 DSSOLFDWLRQ DELOLW\ JRRG WHDP VSLULW FRPPXQLFDWLRQ
 DELOLW\ DQG /LIHORQJ OHDUQLQJ DELOLW\
 ,Q WKH SDVW WKUHH \HDUV VWXGHQWV PDMRULQJ LQ IRRG
 TXDOLW\ DQG VDIHW\ KDYH SXEOLVKHG DUWLFOHV DV WKH ILUVW
 DXWKRU LQ WKH WRS MRXUQDO LQ WKH IRRG ILHOG 7KH\ KDYH
 ZRQ QDWLRQDO FROOHJH VWXGHQW LQQRYDWLRQ DQG
 HQWUHSUHQHUVKLS WUDLQLQJ SURJUDPV DQG DZDUGV VXFK
 DV WKH &KDOOHQJH &XS H[WUDFXUULFXODU DFDGHP LF DQG
 7HFKQRORJLFDO :RUNV &RPSHWLWLRQ IRU &ROOHJH 6WXGHQWV
 LQ =KHMLDQJ 3URYLQFH

&RQFOXGLQJ UHPDUNV

:H RSWLPLJHG WKH WUDLQLQJ REMHFWLYHV DQG SODQV RI RXU
 XQGHUJUDGXDWL VSHFLDOW\ DQG UHIRUPHG WKH SUDFWLFH
 WHDFKLQJ \VWHPV ZLWK VWZGGS BRJUHVVLYH
 OHYHOV RI WLPDQG VSDFH IRU &3()XUWKHU ZH LQWHJUDWHG
 WKH LGHRORJLFDO DQG SROLWLFDO HOHPHQWV DQG SUDFWLFDO
 WHDFKLQJ FRQWHRV WUDLQVHG ZH WKH SUDFWLFDO
 WHDFKLQJ \VWHPV IRU &RQJULGDG RDWH VSHFLDOW\
 2XU SUDFWLFH DQG H[SORUDWLRQ KDYH REWDLQHG VRPH JRRG
 UHVXOWV +RZHYHU ORQJ WHUP DQG FRQLQXR XV H[SORUDWLRQ
 DQG UHIRUP DUH QHHGHG WR WUDLQ WDOHQW EHWWHU

\$FNQRZOHGJPHQW

7KLV ZRUN ZDV VXSSRUWHG E\ ,GHRORJLFDO DQG 3ROLWLFDO
 7HDFKLQJ 5HVHDUFKIMBDRMIFWDRQ 8QLYHUVLW\
 LQ

5HIHUHQFHV

- ' &KDXGKXUL ,QGLDQ - 3XEOLF +HDOWK
- + < 6XQ + <X + % &KL *) <XDQ 6+6 :HE
 RI &RQIHUHQFHV
 VKVFRQI
- / :DQJ /RJLVWLFVROFL 7
- < < &XL = : : < < &KHQ HW DO &KLQD \$IWHU
 6FKRRO (GXFDWLRQ
 *) <XDQ ; % &KL)DQ/LJKW (&KHQ
 ,QG XVWU\ (GXFDWLRQ
 + < 6XQ ; %)DQJ ; (&KHQ *) <XDQ -
 =KHMLDQJ 2FHDQ 8QLY QDWXUDO VFLHQFH