

0 \$± (&FDW I&RDQV KROLF 8QLYHUVLW\ RI \$PHULFD :DVKLQ
(PSKDVLV DUHD 6HFRQGDU\ (GXFDWLRQ

% \$ QJ(OLVK %/LRRQ QD\ ODU\ PRXQW 8QLYHUVLW\ /RV \$QJH

352)(66,21\$/ (;3(5,(1&(

± 3UH\$WHVQWW DQWL 3UHRYIDHGVDW DWH &ROOHJH +HQGHU
7HQXUH WUDFN SRVLWLRQ WKDW LFQFOXGHV WH
FRXUVHV

± &R&RRUGLQDW RU RI 8UEDQ 7HDFKHU (GXFDWLRQ
&DOLIRUQLD 6WDWH 8QLYHUVLW\ 6DFUDPHQWR 6
WPSRUDU\ IDFXOW\ WHDFKLQJ PXOWL SOH DQG VL
SURJUDP OLWHUDF\ PHWKRGV HDUO\ OLWHUDF\
OLWHUDF\ DFDGHPLF ODQJXDJH DQG PXOWL FXO
&RRUGLQDW LRQ SODFH PHQW DQG VX0 €QW\SORR
VHPHVWHU RI VWXGHQW WHDFKLQJ LQ XUEDQ VFK

± VV\$WVQW 3UHRYIDHGVDW\ RI 1RUWK &DUROLQD
*UHHQVERUR 1RUWK &DUROLQD 7HQXUH WUDFN
XQGHUJUDGXDWH DQG JUDGXDOQH DQG WLHMUDQF\ PDQ
OHYHO VWXGHQW HQUROOHG LQ WKH 5HDGLQ.

± \$VVLOMW DURIHWHV\$ 0 8Q&RUSXVW&KULVWL &RU
&KULVWL 7H[DV 7HQXUH WUDFN SRVLWLRQ WK

DÀ° R VD@ GXÀY€ @ WH N T U €DLW HÀO @ OU_W0

± ,UYHLQOLQRULW\ 6FKRODU ,QVWUXFWRU 8QLYH
)UDQFLVFR &DOLIRUQIxDG H5GHW\$HDFKILQJOJLUDLGHD
([SHULHQFH FRXUVH DQG DVVLVWLQJ LQ WKH FU
5HDGLQJ &HUWLILFDWH 3URJUDP IRU HOHPHQW

0DQDQJL (GLWRULDO \$VVLVWDQW 7KX F8DQWLYRQDQV
RI 7H[DXVWALQ \$XVWLQ 7H[DV 5HVSRQVLELOLV

IHDWXUHV HGLWRU +HQU\ 7 7UXHED 3K ' LQ
 FUDWLQJ DQG PDLQWDLQLQJ D GDWDEDVH IRU P
 RUJDQL]DWLRQKRIIX\HVW\X\GLHQZWFIRQ PLWWHH

\$VVLVWDQW , QDVQWUXDFW RDQG /LWHUDF\ 6WXGLHV
 &XUULFXOXP DQG , QVWUXFWLRQ 7KH 8QLYHUVL
 7H[D V 5HVSQRQVLELOLWLHV LQFOXGHG WKH GH
 0DQDJHPHQW)DOO &RPPXQLW\ /LWHUD
 DQG 6RFLDO 6WXGLHV 0HWKRGV 6SULQJ J
 FRRUGLQDWLQJ DQG VXSHUYLVLQJ XQGHUJUDG
 FRPPXQLW\ VHUYLFH FRPSRQHQW RI &RPPXQLW

7HDFKLQJ \$VVLVW\X\GLHQZWFIRQ &XUULFXOXP DQG , QVWU
 8QLYHUVLW\ RI 7H[D V DW \$XVWLQ \$XVWLQ 7H[
 WHDFKLQJ DQG JUDGLQJ FRXUVHV LQ \$SSOLHG
 5HDGLQJ 0HWKRGV)DOO 6RFLD
 /HDUQLQJ 6XPPHU &KLOGUHQ V /LWHUDWX
 DVVLVWLQJ LQ WHFKQRORJLFDO FRPSRQHQW RI

8QLYHUVLW\ 6XBLQH\ 8QLYHUVLW\ RI &XUULFXOXP DQG
 8QLYHUVLW\ RI 7H[D V DW \$XVWLQ \$XVWLQ 7H[
 VXSHUYLVLRQ DQG ILHOG SODFHPHQW RI HOHPH
 SUHVHUYLFH WHDFKHUV VXSHUYLVLRQ RI HOHPH
 SUHVHUYLFH WHDFKHUV GHYHORSPHQW DQG LP
 'HYHORSPHQW 6XBLQH\ 8QLYHUVLW\ DQG DVVHVVP
 WHDFKHUV ILHOG SODFHPHQW SHUIRUPDQFH

± \$WRFLDWH 'LUHFWRU RI (GXFDWLRQ DQG 2XWUH
 6FLHQFH (GXFDW\X\GLHQZWFIRQ &RPPXQLW\ RI 7HDFKHUV 1HZ -
 0DULQH 6FLHQFH &RQVRUWLXP 6HD *UDQW &RO
 1HZ -HUVH\ 5HVSQRQVLELOLWLHV LQFOXGHG WH
 FRXUVHV LQ DXWKHQWLF HQYLURQPHQWV GHY
 ZRUNVKRSV IRU . WHDFKHUV DQG JUDQW DQG
 PDQDJHPHQW

* UDGXDWH \$VVLVW\X\GLHQZWFIRQ 8QLYHUVLW\ RI \$PHULF
 5HVSQRQVLELOLWLHV LQFOXGHG JUDGLQJ DQ XQ
 *URZWK DQG 'HYHORSPHQW

0LGGOH 6FKRRO *UDGH 0LGGOH 6FKRRO RHDFFKH
 WKH 'LVWULFW RI &ROXPELD :DVKLQJWRQ '&
 FODVVURRP LQVWUXFWLRQ DW JUDGH &ODVVI
 6FLHQFH DQG &RQBLQH\ 8QLYHUVLW\ RI DIWHU VFKRRO
 SURJUDP

± +WK 6FKRRO <RXWK &R7RHUGPLQIDW\X\GLHQZWFIRQ 6XEVW
 7HDFKHU 5DPVWHLQ \$LUEDVH 'HS DUWPHQW RI
 .DLVHUVODXWHUQ *HUPDQ\

%OLQJXDO)RXUWK)LIWK *UDGH (OPPHQWDU\ 6
\$QJHOHV 8QLILHG 6FKRRO 'LVWULFW /RV \$QJHO
LQFOXGHG FODVVURRP LQVWUXFWLR^W_W D WU
^WJUDGH FODVVURRP

±)RXUWK *UDGH (OPPHQWDU\ 6FKRRO 7HDFKHU *I
&RDFK\$UFKGLRFHVH RI /RV \$QJHOHV /RV \$QJHO
5W\$SRQVLELOLWLHV LQFOXGHG FODVVURRP LQV
YDUVLW\ EDVNHWEDOO FRDFK

5(6(\$5&+

+RZ GR , WHDFK WKHP ZKHQ , GRQIW VSHDN WKH ODQJX
VWUDWHJLHV RI RQH NLQGHUJDUWHQ FODVVURRP WHDFK
8QLYHUVLW\ RI 1RUWK &DUROLQD *UHHQVERUR :

+VSDQLF ZRPHQ LQ WHDFKLQJ +RZ GLG WKH\ JHW KHUI
7H[DV \$&RUSXV &KULVWL 3ULQFLSDO ,QYHVWLJDWRU 5

:ULWQJ LQ D GXDO ODQJXDJD SURJUDP 7KH GLVFRXUVH
DQG (QJOLVK VSHDNLQJ HPHUJHQW ZULWHUV DV WKH\ C
\$ 0 &RUSXV &KULVWL 3ULQFLSDO ,QYHVWLJDWRU 5DFK

/LWHUDF\ FRDFKHQH2OGRWLVQHHLRUD" &RUSXV[&K\$LQWL
&R3ULQFLSDO ,QYHVWLJDWRUV -DFN &DVVLG\ DQG 5DFK

:ULWH 2Q \$QK\$IRVQHULWLQJ 7XWRULDO 3URJUDP IRU +L
6WXGHQWV7H[DV \$ 0 &RUSXV &KULWWRU 53DFLKQHQS D6D,QD

/HYHOLQJ WH[W IRU ILUVW JUDGH UHDGLQJ LQVWUXFWL
,QYHVWLJDWRU -DPHV +RIIPDQ \$VVLVWHG LQ GHVLJQ D
WUDQVODWHG SDUHQWDO FRQVFRQSDQRWVP DQGUD6/S/DQW
FROOHFWLRQ DQG DQDO\VLV

&RPLQJ WR ORYH ERRNV 5HDGLQJ SUHIH8QQYHUVRLMWVR
7H[DV 3ULQFLSDO ,QYHVWLJDWRU -R :RUWK\ \$VVLVWH
GLVVHPLQDWLRQ XQWUHVHDUFK U

*5\$176

+LVSDQLF ZRPHQ LQ WHDFKLQJ +RZ GLG WKH\ JHW KHUI
)DFXOW\ 5HVHDUFK (QKDQFHPHQW &RDQXW &KUDWWSL 8Q

:ULWLQJ LQ D GXDO ODQJXDJD SURJUDP 7KH GLVFRXUVH
DQG (QJOLVK VSHDNLQJ HPHUJHQW ZULWHUV DV WKH\ C
IRU (GXFDWLRQDO 'HYHORSPHQW DQG 5HVHDUFK 7H[DV

5DFKHO * 6DODV

3DJH

/LWHUDF\ FRDFKHV 2OG ZLQH LQ D Q H&Z UESRXW W&XHU VRM DMU F K
(QKDQFHPHQ&VRQODHQW RI (GXFDWLRQ &R 3ULQFLSDO ,Q
5DFKHO * 6DODV

:ULWH 2Q \$Q DIWHU

5DFKHO * 6DODV

3DJH

6DODV 5 * \$ &ULWLFDO (WKQRJUDSK\HDFQRHRUV DW 7HD
/LWHUDF\ 7KURXJK WKH /HQV RI D 1RYLFH .WQGHUJDW
\$QQXDO PHHWLQJ RI WKH 1DWLRQDO 5HDGLQJ &RQIHUH

6DODV 5 * 3HQQLQJWRQ - 3UDWHG 1RQILFWLORQO WKEO
/LWHUDWXUH IRU WKH &RQWHQW \$UHDV *UHDW %RRN
&ODVVURRP 0LFURZRUNV WDRQSQ &D\VRPHQWWHLQJD W\IWKHH ,Q
5HDGLQJ \$VVRFLDWLRQ &KLFDJR

&RRSHU - 6DODV 5 * 5RKU - 0LOOHU 6 'XII\ *
WHDFKHUV SUDFWLFH :KR DP , LQ WKLV WKLQJ ZH FDO
\$QQXDO PHHWLQJ RI WKH \$PHULFDQ (GXFDWLRQDO 5HVI

6D0D5 * /HDUQLQJ DERXW RXU FXOWXUH ,QWHJUDWL
WKH FXU ~~U6LHPXLQOXP~~ SUHVHQWHG DW WKH 3UHFRQIHUHQF
5HDGLQJ &RQIHUHQFH &RUSXV &KULVWL 7;

6DODV 5 * %RJJV 0 5HFKLV 5 , FDQ ZULWH DER
ZKHUH GR , V~~W~~~~D~~~~F~~~~H~~~~W~~~~W~~~~H~~~~D~~~~F~~~~K~~~~H~~~~U~~~~W~~~~Z~~~~R~~~~Q~~~~F~~~~R~~~~I~~~~P~~~~O~~~~J~~~~/~~~~D~~~~W~~~~L~~~~Q~~~~R~~~~R~~~~V~~~~X~~~~G~~~~H~~~~Q~~
DIW~~H~~~~F~~~~K~~~~R~~~~R~~~~O~~ ZULWLQJ FOXE 3DSHU SUHVHQWHG DW WKH
DQQXDO PHHWLQJ OLDPL)/

6DODV 5 * ([SORULQJ +LVSDQLF FKLOGUHQ~~T~~V OLWHU
6XEFRPDQGDQWH 0DUFRV 3UHFRQIHUHQFH ,QVWLWXWH
&RQIHUHQFH &RUSXV &KULVWL 7;

6DODV 5 * \$ /DWLQD SHUVSHFWLYH \$ ORRN DW :KLW
FKLOG3UDHSQH U SUHVHQW ~~6~~~~I~~~~G~~~~D~~~~Q~~~~W~~~~Q~~~~W~~~~K~~~~H~~~~R~~~~Q~~~~D~~~~U~~~~Q~~~~R~~~~O~~~~D~~~~P~~~~H~~~~H~~~~W~~~~L~~~~Q~~~~J~~
\$ QWRQLR 7;

6DODV 5 * \$ ORRN DW :KLW H SUHVHUYLFH WHDFKHU
OLQJXLVWLF GLYHUVL~~W~~~~F~~~~R~~~~I~~~~P~~~~P~~~~H~~~~S~~~~W~~~~H~~~~G~~~~R~~~~I~~~~Q~~~~D~~~~W~~~~R~~~~O~~~~\~~~~/~~~~D~~~~W~~~~L~~~~Q~~
3DSHU ~~W~~~~H~~~~F~~~~G~~~~H~~~~S~~~~U~~ SUHVH~~Q~~~~D~~~~Q~~~~Q~~~~W~~~~L~~~~R~~~~Q~~~~P~~~~D~~~~H~~~~W~~~~W~~~~L~~~~K~~~~Q~~~~J~~
5HVHDUFK \$VVRFLDWLRQ 6HDWWOH :DVKLQJWRQ

6DODV 5 * \$ PXOWLFXOWXUDO OLWHUDF\ H[SHULHQ
ILFWLRQ LQ WKH FODVVURRP 3DSHU SUHVHQWHG DW W
\$QQXDO 5HDGLQJ &RQIHUHQFH &RUSXV &KULVWL 7;

6DODV 5 * \$ ZRUMHLLQY ISFUHR JAUHHD/FVK H3UW~~H~~~~Q~~~~S~~~~F~~~~H~~~~R~~~~U~~~~P~~~~F~~~~H~~~~S~~~~D~~~~W~~~~W~~~~I~~~~R~~~~Q~~
VWXGHQWV ZKR DUH VWUXJJOLQW KUQHJDQJHDUSVK \ 3DI S(~~K~~UX FSDU
&RQIHUHQFH 3KLODGHOSKLD 3\$

6DODV 5 * 3HQQLQJWRQ - +RIIPDQ - /LWHUDF\ D
FRPXQLGDG 3UHVHUYLFH WHDFKHUV~~T~~ YLHZV RQ WXWR
SUHVHQWHG D5W~~W~~~~K~~~~L~~~~H~~~~Q~~~~J~~~~D~~~~W~~~~R~~~~C~~~~E~~~~D~~~~O~~~~Q~~~~F~~~~O~~~~I~~ PHHWLQJ 2UODQGR

6DODV 5 * *XHVW (GLWRU 1DWLRQDO 5HDGLQJ &RQ
KWWSZ RDNODQG HGX aPFHQHDQH QUF QUFLQGH[KWPC

6D0D5 * OH[LFDQ \$PHULFDQV LQ DGROHVFHQW FKLO
3DSHU SUHVHQWHG DW WKH ,QWHUQDWLRQDO 5HDGLQJ
*XDGDODMDUD OH[LFR

6DODV 5 * 6ODYH OLWH~~Q~~~~D~~~~F~~~~G~~~~G~~~~Q~~~~Q~~~~G~~~~K~~~~K~~~~H~~~~\$~~~~W~~~~R~~~~H~~~~E~~~~O~~~~D~~~~O~~~~C~~~~X~~~~P~~~~6~~
\$PHULFDQ UHDGLQJ LQVWUXFWLRQ 3DSHU SUHVHQWHG
&RQIHUHQFH 2UODQGR)/

5DFKHO * 6DODV

3DJH

:RUWK\ - 3DWWHUVRQ (8 3UDWHU 6 7XUQHU 0 6D
RIHOHPHWQWWDQJHQWV LQ D VFKRR03BDMHGS WHWHRQWLQG SW
1DWLRQDO 5HDGLQJ &RQIHUHQFH WK DQQXDO PHHWL

6DODV 5 * 3UHVHUYLFH WHDFKHU HGXFDWLRQ \$XV
/DQJXDJDH \$UWV 9LGHR 3URGXFWLRQ

6DODV 5 * <HV WKHUH LV PDJLF LQ OLWHUDWXUH
\$WKHQV *HRUJLD 1DWLRQDO 5HDGLQJ 5HVHDUFK &HQV

7LHGHPDQQ - 6DODV 5 * 2SHUDWLRQ SDWKILQGH
HGXFDWWRUV 3UHVHQWHG DW WKH &RDVWDO =RQH &RQ

7LHGHPDQQ - 6DODV 5 * \$XWKHQWLF VFLHQFH W
DSSURDFK 3DSHU SUHVHQWHG DW WKH 0DULQH 7HFKQ
([SRVLWLRQ :DVKLQJWRQ '&

6DODV 5 * 7LHGHPDQQ - \$TXDWLF UHVRXUFH PRG
WHFKQLTXH IRU HGXFDWRU WUDLQLQJ 3DSHU SUHVHQ
(VWXDULQH 5HVHDUFK)HGHUDWIDQ&RQI&U\$HQVMUD
\$EVWUDFWV RI WKH WK %LHQQLDO ,QWHUQDWLRQDO

+21256)(/2:6+,36

\$PHULFDQ (GXFDWLRQDO 5HVHDLWVH \$WVDRWFLRQV LIRQO \$25
8QLYHUVLW\)HOORZVKD R XQQLDO ,QuZVH OLO TM Z@

5 D F K H O * 6 D O D V

3 D J H