

-RXUQDO RI &HOOXODU DQG ORFH)
3KDUPDFRORJ\

\$OVXOWDQ -&HOOROR3KDU

3HUVSHFWLYH

&OLQLFDO 3KDUPDFRORJ\ LV 8WL0LJHG LQ WK
WKH 7UHDWPHQW RI 3DWLHQWV

\$EGXOODK \$OVXOWDQ

'HSDUWPHQW RI &OLQLFDO 3KDUPDF\ .LQJ 6DXG 8QLYHUVLW\ 5L\DGK 6DXGL \$UDELD

,QWURGXFWRQ

'UXGHYHORSPHQW LV D OHQJWK\ DQG LQWULFDWH SURFHVV WKDW LQFOXGHV
HYHU\WKLQJ IURP SUHFOLQLFDO WR FOLQLFDO VWXGLHV 7KHUH LV D ULVLQJ LQW
LQ WKH .LQJGRP RI 6DXGL \$UDELD .6\$ LQ VXSSRUWLQJ LQQRDWRQ
UHVHDFK DQG ORFDO FRQWHQW LQFOXGLQJ FOLQLFDO WULDOV 3KDVH , ,9
7KHUH DUH QRZ RYHU UHJLVWHUHG FOLQLFDO WULDOV LQ 6DXGL \$UDELD ZLW
WKH QXPEHU H[SHFWHG WR LQVXV WKDW LV ERWK VDIH DQG
HIIHFWDUW LPSRUWDQW SDUW RI GUXJ UHVHDFK DQG FOLQLFDO WULDOV
&OLQLFDO SKDUPDFRORJ\ RI KRZ SKDUPDFHXWLFDOV DIIHFW
KXPDQV LV HVVHQWLDO IRU PDNLQJ LQIRUPHG GHFLVLRQV GXULQJ WKH GUXJ
GHYHORSPHQW SURFHVV 3KDUPDFRORJ\ WLFV
SKDUPDFRORJ\ DUH DOO DV \$EOLFO FOLQLFDO SKDUPDFRORJ\
UDSLGO\ JURZLQJ DUHD ZLWK QXPURXV DSSOLFDWRQV DW DOO SKDVHV RI OLIH
&OLQLFDO SKDUPDFRORJ\ DV ZHOO DV UHJXODWRU\ DJHQF\ GHPDQGV ZLOO EH
LQFOXGHG LQWR UHVHDFK HQKDQFLQJ WKH GUXJ GHYHORSPHQW SURFHVV DQG
VSHHG LQ XS WKH SLSHOLQH &OLQLFDO SKDUPDFRORJ\ HQFRPSDVVHV
SKDUPDFRNLQH WLFV SKDUPDFRG\QDPLFV DQG SKDUPDFRORJ\ WLFV ,W V D
IDW H[SDQGLQJ ILHOG ZLWK D ZLGH UDQJH RI XVHV IRU SHRSOH DW DOO VWDJH
RI OLIH &OLQLFDO SKDUPDFRORJ\ UHJXODWRU\ DJHQF\
UHTXLUPHQWV ZLOO EH LQFOXGHG LQWR UHVHDFK VSHHG LQ XS WKH GUXJ
GHYHORSPHQW SURFHVV &OLQLFDO SKDUPDFRORJ\ LV DOVR XVHG LQ GLUHFV
SDWLHQW FDUH WR WDLORU WUHDWPHQW WR WKH LQGLYLGXDO QHHGV RI WKH
7KHU DSHXWLF GUXJ PRQLWRULQJ SKDUPDFRORJ\ WLFV DQG PRGHO GULYHQ
SUHFLVLRQ GRVLQJ DUH VRPH RI WKH PHWKRGV XVHG WR RSWLPLVH GRVH IRU
SDUWLFXODU SDWLHQWV 'UXJ GHYHORSPHQW LV D ORQJ DQG LQWULFDWH SURFH
WKDW VWDUWV ZLWK SUHFOLQLFDO UHVHDFK DQG HQGV ZLWK FOLQLFDO WULDO
LV D ULVLQJ LQWUHVW LQ WKH .LQJGRP RI 6DXGL \$UDELD .6\$ LQ
VXSSRUWLQJ LQQRDWRQ UHVHDFK DQG ORFDO FRQWHQW LQFOXGLQJ FOLQ
WULDOV 3KDVH , ,9 7KHUH DUH QRZ RYHU UHJLVWHUHG FOLQLFDO WULDOV L
6DXGL \$UDELD ZLWK WKH QXPEHU H[SHFWHG WR JURZ 0HGLFDWRQ XVH WKDW
LV ERWK VDIH DQG HIIHFWDUW LPSRUWDQW SDUW RI GUXJ UHVHDFK DQG
FOLQLFDO WULDOV

'HVFULSWLRQ

&OLQLFDO SKDUPDFRORJ\ RI KRZ SKDUPDFHXWLFDOV DIIHFW
KXPDQV LV HVVHQWLDO IRU PDNLQJ LQIRUPHG GHFLVLRQV GXULQJ WKH GUXJ
GHYHORSPHQW SURFHVV 3KDUPDFRNLQH WLFV SKDUPDFRG\QDPLFV DQG
SKDUPDFRORJ\ DUH DOO DV \$EOLFO FOLQLFDO SKDUPDFRORJ\
SKDUPDFRORJ\ DQG UHJXODWRU\ DJHQF\ UHTXLUPHQWV DUH ERWK EHLQJ
LQFOXGHG LQWR UHVHDFK ,W V D JURZLQJ DUHD ZLWK D YDULHW\ RI XVHV LQ
GUXJ GHYHORSPHQW LQFOXGLQJ HVWDEOLVKLQJ RSWLPDO GRVHV IRU 3KDVH , ,
DQG , , VWXGLHV DQDO\VLQJ ELRHTXLYDOHQFH DQG ELRVLPLODU UHVHDFK DQG
GHVLJQLQJ FOLQLFDO WULDOV DV ZHOO DV FOLQLFDO SKDUPDFRORJ\
UHJXODWRU\ DJHQF\ GHPDQGV ZLOO EH LQFOXGHG LQWR UHVHDFK HQKDQFLQJ
WKH GUXJ GHYHORSPHQW SURFHVV DQG VSHHG LQ XS WKH SLSHOLQH &OLQLFDO
SKDUPDFRORJ\ LV DOVR XVHG LQGLUHFV SDWLHQW FDUH WR SHUVRQDO
WUHDWPHQW WR WKH SDWLHQW V VSHFLILF QHHGV 6RPH RI WKH DSSURDFKHV X
WR RSWLPLVH GRVDJH IRU VSHFLILF SDWLHQWV LQFOXGHG WKHU DSHXWLF GUXJ
PRQLWRULQJ SKDUPDFRORJ\ WLFV DQG PRGHO GULYHQ SUHFLVLRQ GRVLQJ ,Q
6DXGL \$UDELD FOLQLFDO SKDUPDFRORJ\ LV XQGHUWL0LVHG DQG ZH EHLHYH L

WKHUH LV D QHHG WR SHUVRQDOL]H WKHUFKXQVWVHG-RQESDWPBQWOUHSDVHGGOYDU
VXFK DV GHPRJUDSKLF LQIRUZPHWURQPRYGSUHQVWVHG-RQESDWPBQWOUHSDVHGGOYDU
DZD\ IURP D RQH VL]H ILWV DOO DSSURDFXOWRPSHUSPRQDOL]HG\$PHQZFLQH LQ:H
FOLQLFDO SUDFWLFH \$V FRQWHPSRUDU D FOLQLFDO ILWV DOO DSSURDFXOWRPSHUSPRQDOL]HG
PHGLFLQH WKH LQWHJUDWLRQ DQG DSSURDFXOWRPSHUSPRQDOL]HG\$PHQZFLQH LQ:H
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3UHFLVLRQ GRVH EDVHG RQ 3*[DQG PRGH\$PHQZFLQH LQ:H
KDYH WKH SRWHQWLDO WR LPSURYH FOLQLFDO SUDFWLFH\$PHQZFLQH LQ:H
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LQWHUDFWLRQ LQYHVWLJDWLRQV DUH FRPPRQ\ XQGHUWDNHQ LQ KHDOWK
YROXQWHHUV 7KH\ DUH FDUULHG RXW HDUQDPHWKH GUKJKGHYHORSNKOW\SURFH
GXUHQVH , UHVHDFK DQG DUH QRW DVFRHODLQG DZLWKRQRUSDUWPLVXODUP1DF
SKDVH DQRO\ VH GUXJ GUXJ LQWHUDFWLRQV QLEWQFRQJL WQGH[SHUSHWLDFRUR GL
UHF RJQL]HG IRU SUHYHQWLQJ GUXJ GUXJ LQWHUDFWLRQV LV HPSORIHG

5HIHUHQFHV

\$DURQV / .DUOVVRQ 02 0HQWUH) 5ROH RI PRGHQOLQJ DQG
VLPXODWLRQ LQ 3KDVH , GUXJ GHYHORSPHQW (XU - 3KDUP 6FL