

Artigo original

DESEMPENHO DE CRIANÇAS COM E SEM DEFICIÊNCIA EM TESTES DE CONCEITOS TRADICIONAIS E NO FORMATO DE HISTÓRIAS INFANTIS*

Performance of children with and without disabilities on traditional tests of basic concepts and on tests designed as children's stories.

Rendimiento de niños con y sin discapacidades en pruebas de concepto tradicional y en formato de cuento infantil

Resumo

Objetivos: Investigar se o desempenho de crianças com e sem deficiência em testes de conceitos básicos é influenciado pelo formato da avaliação, comparando-se testes psicoeducacionais com avaliações em formato de histórias infantis. Método: Participaram 102 crianças com idades entre quatro e 13 anos - 61 com desenvolvimento típico e 41 com paralisia cerebral. Oito conceitos básicos foram avaliados por quatro instrumentos: *Boehm Test of Basic Concepts (Third Edition-Preschool)*, *Bracken Basic Concept Scale (Third Edition-Receptive)* e duas histórias infantis, "Feliz Aniversário" e "A Casa dos Bichos". Cada história foi desenvolvida em conformidade com características de um dos testes, respectivamente, como o tamanho do caderno de figuras e a disposição das alternativas. Resultados: Considerando-se todos os sujeitos, os melhores desempenhos foram obtidos na história "A Casa dos Bichos" (50,49% de acertos) e no teste de Bracken (50,25%), seguidos pela história "Feliz Aniversário" (46,20%) e pelo teste de Boehm (44,73%). Obteve-se diferença significante nas comparações entre as médias dos dois primeiros instrumentos em relação aos dois últimos. Discussão: Diferentes características dos instrumentos podem ter influenciado os resultados, como a disposição das alternativas e o domínio conceitual em que cada conceito era aplicado; o contexto da história parece ter influenciado as crianças com paralisia cerebral, cujos desempenhos foram inferiores somente no teste de Boehm. Conclusão: Embora o contexto das histórias não tenha sido relevante em todas as comparações, os resultados indicam que o desempenho das crianças varia em função do instrumento de avaliação, devendo-se considerar esse aspecto no desenvolvimento de testes de conceitos básicos.

Palavras-chave: Formação de Conceito; Estudos de Avaliação; Paralisia Cerebral; Pré-escolar.

Abstract

Objective: To investigate if the performance of children with and without disabilities on conceptual assessments varies in function of the form of evaluation, comparing results of psychoeducational assessments with instruments presented like storybooks. Method: The subjects were 102 children, ranging from 4 to 13 years - 61 preschool children without disabilities and 41 children with cerebral palsy. Four instruments were administered to evaluate eight basic concepts: *Boehm Test of Basic Concepts (Third Edition-Preschool)*, *Bracken Basic Concept Scale (Third Edition-Receptive)* and two stories, "Happy Birthday" and "Animals' House". Each story was designed according to some features of a psychoeducational test, respectively, such as the size of picture books and the arrangement of options. Results: Considering all children, best performances were obtained on "Animals' House" story (50.49% of correct answers) and on Bracken test (50.25%), followed by "Happy Birthday" story (46.20%) and Boehm test (44.73%). On the comparison between the average of the two first instruments with the last ones, were found significant differences. Discussion: Different features of instruments may have influenced the results, such as arrangement of options and conceptual domain in which concepts were applied; however, children with cerebral palsy were more influenced by the story's context than the other group, as their results were worst just on Boehm test. Conclusion: Although the story format hadn't been an important factor in all comparisons, the results support that children's performance varies according to the instrument of evaluation, becoming important to consider this aspect in development of tests of basic concepts.

Key words: Concept Formation; Evaluation Studies; Cerebral Palsy; Preschool Children.

Resumen

Objetivos: investigar si el rendimiento de los niños con y sin discapacidad en las pruebas de concepto básico está influenciado por el formato de la evaluación, comparando las pruebas psicoeducativas con las evaluaciones en el formato de cuentos infantiles. Método: participaron 102 niños de cuatro a 13 años, 61 con desarrollo típico y 41 con parálisis cerebral. Ocho conceptos básicos fueron evaluados por cuatro instrumentos: *Boehm Test of Basic Concepts (Third Edition-Preschool)*, *Bracken Basic Concept Scale (Third Edition-Receptive)* y dos cuentos infantiles, "Feliz Cumpleaños" y "La Casa de Animales". Cada cuento se desarrolló de acuerdo con las características de una de las pruebas, respectivamente, como el tamaño del libro ilustrado y el diseño de las alternativas. Resultados: Teniendo en cuenta a todos los sujetos, las mejores actuaciones se obtuvieron en "La Casa de Animales" (50,49% de aciertos) y la prueba de Bracken (50,25%), seguido de "Feliz Cumpleaños" (46,20%) y por la prueba de Boehm (44.73%). Se obtuvo una diferencia significativa en las comparaciones entre las medias de los dos primeros instrumentos en relación con los dos últimos. Discusión: Las diferentes características de los instrumentos pueden haber influido en los resultados, como la disposición de alternativas y el dominio conceptual en el que se aplicaba cada concepto; el contexto de los cuentos parece haber influido en los niños con parálisis cerebral, cuyas actuaciones fueron inferiores solo en la prueba de Boehm. Conclusión: aunque el contexto de los cuentos no fue relevante en todas las comparaciones, los resultados indican que el rendimiento de los niños varía según el instrumento de evaluación, y este aspecto debe considerarse en el desarrollo de pruebas de conceptos básicos. **Palabras clave:** Formación de Concepto; Estudios de Evaluación; Parálisis Cerebral; Preescolar.

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PHQWRV QB TXH GLI UHVSHLWR iV UHVSRVWDV GDGDV SDUD EDGD ER

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R WHVWIBWXGIRLWXWLQ]DGR SDUD FRPSDUDU R JUXSR \$ FRP R JUXSR
FRPSDUDU HQWUH DV FULDQoDV FRP SDUDOLVLD XQLODWHUDO RX ELC
TXHVVwmR LQGLYLGXDOPHQWH DV FRPSDUDo}HV IRUDP IHLWDV SRU PI
QH\ 2 WHVWHT&RG4UXDGR GH LQGHSHQGrQFLD IRL HPSUHJDGR SDUD LG
WDGRV GDV FULDQoDV GH DPERV RV JUXSRV HUDP LQGHSHQGHQW HV C
SDUDo}HV GDV PpGLDV GRV LQVWUXPHQWRV D PDJQLWXGH GR HIHLW
&RKHQ &RKHQIV G \$ FRUUHODomR HQWUH RV UHVXOWDGRV GRV WH

&RHILFLHQWH 3HDUVRQ GH &RRRSHQW &mHR DUFRRQXWRWrQFLD LQWHUQD G
PHQWRV IRL PHGLGD SHOR &RHILFLHQWH DOID GH &URQEDFK

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&DUDFWHUL]DomR GD \$PRVWUD
3DUWLFLSDUDP FULDQoDV PDWULFXODGDV HP LQVWLWXLo}
omR GLYLGLGDV HP *UXSR \$ FRQVWLWXtGR SRU FULDQoDV FRP GH
PHQLQDV H PHQLQRV FRP LGDGHV HQWUH TXDWUR DQRV H TXDWUR
OLQ 0D[0G '3 6 *UXSR % FRPSRVW
SRU FULDQoDV FRP SDUDOLVLD FUHEUDO PHQLQDV H PHQLQR
DQRV H TXDWUR PHVHV H DQRV H QRYH PHVHV 0 OLQ 0D
'3 6
'DV FULDQoDV GR *UXSR % DSUHVHQWDYDP SDUDOLVLD FUHE
H DSUHVHQWDYDP R WLSR XQLODWHUDO HVSiVWLFR 8
WLSR ELODWHUDO DWi[LF R GXDV WLQKDP R WLSR ELODWHUDO
DSUHVHQWDYDP XP TXDDGURWIRLWHR HVSDVWLFLGDGH VHGR XP
XP XQLODWHUDO (P UHODomR DR *0)&6 FULDQoDV IRUDP FODVVLIL
QtyHO , FLQFR QR QtyHO,,, VHW QR QtyHO ,9 H VHLV QR QtyHO 9
\$OpP GDV FULDQoDV LQFOxtGDV QD SHVTXLVD RXWUDV IRU
UHQWHV PRWLYRV 'DV FULDQoDV FRP SDUDOLVLD FUHEUDO TXH Q
DSUHVHQWDYDP R WLSR ELODWHUDO HVSiVWLFR HP UHODomR DR *
GDV QR QtyHO , HQTXDQWR IRUDP FODVVLILFDR DQM YQHRO QGMHUVBRO
omR GRV SDLV GR *UXSR \$ DSUHVHQWDYDP DwP R HQVLQR IXQG
LQGLFDUDP R HQVLQR PpGLR HP RUVR RLQGRPSOBRWVFRDUL]D
omR DFLPD GR HQVLQR PpGLR QmR LQIRUPDUDP 1R *UXSR %
DwP R IXQGDPHQWDO FRPSOHWR LQGLFDUDP R HQVLQR PpGLR H
DSUHVHQWDYDP HVFRDUL]DomR DFLPD GR HQVLQR PpGLR

\$QiOLVH GHVFULWLYD H FRPSDUDo}HV LQWUDJUXSRV

\$ 7DEHOD DSUHVHQWD DV SRUFHQWDJHQV GH DFHUWRV REWLGI
SRU JUXSR HP FDGD FRQFHLW-RV TWWVWIK DQEGRHBRQVLGHUDGRV WRGR
MHLWRV GD SHVTXLVD H R WRWDO REWLGR SRU WHVWH RV PHOKRUH
GRV QD KLVWYULD \$ &DVD GRV %LFKRV H QR WHVWH GH %UDFNHQ VH
YHUViULR H SHOR WHVWH GH %RHKP

&DJHLUR \$30 /RP{QDFR -)% &HDIHIPSRIQ&R GH FULDQoDV FRP H VHP GHILFLrQFLD HP WHVWH GH FRQFHLWRV WUDGLFLRQD
GH KLVWYULDV 15QINDQWVHULQVW %UDV 7HU 2FXS 5LR GH -DQHLUR Y

7DEHOD3RUFHQWDJHP GH UHVSRVWDV FRUUHWDV REWLGDV SHORV JU
FRQFHLWR H WHVWH

7HVWHV

& RQFH^LW^RUXSR % UDFNHQ%RHKP % LFKRV\$QLYHUViULR^{7RWDO}
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&D]HLUR \$30 /RP{QDFR -)% &HDYHIPSRI^SCR GH FULDQoDV FRP H VHP GHILFLrQFLD HP WHVWH GH FRQFHLWRV WUDGLFLRQD
GH KLVWyULDV 15QINDQ, WULQVW %UDV 7HU 2FXS 5LR GH -DQHLUR Y

1DV FRPSDUDo}HV HQWUH DV PpGLDV GRV LQVWUXPHQWRV DSUH
IRUDP REWLGDV GLIHUHQoDV VLJQLILFDQWHV QDV FRPSDUDo}HV HQWUH
%RHKP HQWUH R WHVWH GH %UDFNHQ H)HOL] \$QLYHUViULR HQWUH
%RHKP H HQWUH \$ &DVD GRV %LFKRV H)HOL] \$QLYHUViULR VHQGR D
QD HP VXD PDLRULD 1mR KRYXH GLIHUHQoD VLJQLILFDQWH HQWUH \$
%UDFNHQ EHP FRPR HQWUH D KLVWyULD)HOL] \$QLYHUViULR H R WHV

7DEHOD &RPSDUDomR HQWUH DV PpGLDV GRV LQG/HB/W X B HHQWBR V XSCHOR W
GD PDJQLWXGH GR HIHLWR SHOR tQGLFHV B HW&RGKRH/QR VFR/VXWILHGHWURDVQ G B
VD

| &RPSDUDo} | 0 | '3 | G ^D | W JO | S |
|------------|---|----|----------------|------|---|
| %UDFNHC | | | | | |
| %RHKP | | | | | |
| %UDFNHC | | | | | |
| \$QLYHUViL | | | | | |
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| \$QLYHUViL | | | | | |
| %LFKRV | | | | | |
| %UDFNHC | | | | | |
| \$QLYHUViL | | | | | |
| %RHKP | | | | | |

D &RKHQ¶V G ±GH_VSUH]tYHO ±GSHTXHQR G ±PpGLR

1D 7DEHOD TXH DSUHVHQWD DV FRPSDUDo}HV HQWUH DV PpGL
DYDOLDomR FRQWHL GFHDGDDQJURXSR VHSDUDGD-PVHQWDXH REWHSRD\$ PDQWH
YH R SDGUMR DQWHULRU 4XDQGR FRQVLGMHDQDR 7DEHOSR %XREWHW
WyULDV \$ &DVD GRV %LFKRV H)HOL] \$QLYHUViULR DSUHVHQWDUDP UI
QR WHVWH GH %UDFNHQ HQTXDQWR R WHVWH GH %RHKP PDQWHYH R
HQWUH DV PpGLDV GRV LQVWUXPHQWRV FRQVWDQWH QD 7DEHOD
HQWUH \$ &DVD GRV %LFKRV H R WHVWH GH %RHKP H HQWUH R WHV
VHQGR D PDJQLWXGH GR HIHLWR SHTXHQD

7DEHOD&RPSDUDomR HQWUH DV PpGLDV GRV L^{QG/HB/W}X^B**HHQFWB** F XSOHO R W
GD PDJQLWXGH GR HIHLWR SHOR tQGLFHV^E HR &JRUKXHSQR \$F RIQRV L^{QG/HKIS} B Q%G RV H
SDUDGDPHQWH

| | & R P S D U D o } H V | 0 | '3 | G ^D | W | J O | S |
|--------|-----------------------|---|----|----------------|---|-----|---|
| | % UDFNHQ | | | | | | |
| | % RHKP | | | | | | |
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| | \$ QLYHUViULF | | | | | | |
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| * UXSR | % RHKP | | | | | | |
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| | \$ QLYHUViULF | | | | | | |
| | % LFKRV | | | - | | | |
| | % UDFNHQ | | | | | | |
| | \$ QLYHUViULF | | | - | | | |
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| | & R P S D U D o } H V | 0 | '3 | G ^D | W | J O | S |
| | % UDFNHQ | | | | | | |
| | % RHKP | | | | | | |
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| | \$ QLYHUViULF | | | | | | |
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| | % LFKRV | | | | | | |
| | % UDFNHQ | | | | | | |
| | \$ QLYHUViULF | | | | | | |
| | % RHKP | | | | | | |

&D]HLUR \$30 /RP{QDFR -)% &HDYHIPSRI^{CS}&R GH FULDQoDV FRP H VHP GHILFLrQFLD HP WHVWH GH FRQFHLWRV WUDGLFLRQD
GH KLVW yULDV 15QINDQ,WLQVW %UDV 7HU 2FXS 5LR GH -DQHLUR Y

7DEHOD&RPSDUDo}HV HQWUH DV TXHVW}HV GRV LQVWUXPHQWRV GH D
WH HVWDWtVWLFR :LOFR[RQ WFRQRV\GRHU\DUQMRGLWRV GD SHVTXLVD

| | | | |
|-----------------|-----------------------------|---|---|
| & R Q F H L W R | & R P S D U D o m R | 7 | S |
| | % L F K % U D F N H Q | - | |
| | % R H K % U D F N H Q | - | |
| , Q I H U L R U | \$ Q L Y H U-V% U D F N H Q | - | |
| | % R H K % L F K R V | - | |
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| (Q W U H | \$ Q L Y H U-V% U D F N H Q | - | |
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|) U H Q W H | \$ Q L Y H U-V% U D F N H Q | - | |
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| \$ P E R V | \$ Q L Y H U-V% U D F N H Q | - | |
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| | % L F K % U D F N H Q | - | |
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| Ò O W L P R | \$ Q L Y H U-V% U D F N H Q | - | |
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| 0 X L W R V | \$ Q L Y H U-V% U D F N H Q | - | |
| | % R H K % L F K R V | - | |
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& R Q W L Q X D & R H G O D

| & R Q F H L | & R P S D U D o m R | 7 | S |
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| | % L F K % U D F N H Q | - | |
| | % R H K % U D F N H Q | - | |
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| 5 H G R U | % R H K % L F K R V | | |
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| | \$ Q L Y H U - V % W I H R K P | - | |
| | % L F K % U D F N H Q | - | |
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3DUD R FRQFHLWR ³LQIHLRU' IRL HQFRQWUDGD GLIHUHQoD VLJ
 WUH DV KLVWYULDV)HOL] \$QLYHUViULR H \$ &DVD GRV %LFKRV VHQGF
 WRV REWLGD QD VHJXQGD 1D DYDOLDomR GR FRQFHLWR ³HQWUH' KR
 FRPSDUDomR HQWUH R WHVWH GH %RHKP H RV RXWURV WUrV LQVWUX
 DSUHVHQWRX HVFRUHV PDLV EDL[RV 2 FRQFHLWR ³IUHQWH' IRL R ~QI
 GH %RHKP H D KLVWYULD)HOL] \$QLYHUViULR DSUHVHQWDUDP UHVXOW
 WUDGDV GLIHUHQoDV VLJQLILFDQWHV QDV FRPSDUDo}HV HQWUH R WH
 HQWUH D KLVWYULD)HOL] \$QLYHUViULR H R WHVWH GH %UDFNHQ R WH
 FKRV H HQWUH DV GXDV KLVWYULDV 1HVWDV TXDWUR FRPSDUDo}HV
 GLIHUHQoDV VLJQLILFDQWHV TXDQGR FRQVLGHUDGRV RV FRQFHLWRV
 FRQWXGR RV PDLRUHV HVFRUHV IRUDP REWLGRV QR WHVWH GH %UDF
 UD R FRQFHLWR ³PXLWRV' R SLRU UHVXOWDGR IRL REWLGR QR WHVW
 oDV VLJQLILFDQWHV QD FRPSDUDomR GHVWH FRP R WHVWH GH %UDFN
 YHUViULR 4XDQWR DR FRQFHLWR ³DR UHGRU' RV PHQRUHV HVFRUHV
 NHQ KDYHQGR GLIHUHQoDV VLJQLILFDQWHV QD VXD FRPSDUDomR FRP

& R P S D U D o } H V L Q W H U J U X S R V

\$ R FRPSDUDU R JUXSR \$ FRP R JUXSR % QR TXH VH UHIUH jV PI
 WRV GH DYDOLDomR DSHQDV QD KLVWYULD)HOL] \$QLYHUViULR RV GH
 GH VXMHLWRV DSUHVHQWDUDP GLIHUHQoDV VLJQLILFDQWHV FRP XPD
 FRQIRUPH SRGH VHU REVHUYDGR QD 7DEHOD 1HVWH LQVWUXPHQWR
 WDGR VXSHULRU DR GR JUXSR \$

7DEHOD&RPSDUDomR HQWUH RV JUXSRV \$ H % QR TXH VH UHIUH
WUXPHQWRV XWLQLWDXGRV XGHHQWRV tQGLFH GH &RKHQ SDUD R FiOFXOR
WXGH GR HIHLWR

| ,QVWUXPHC | *UXSR | 0 | '3 | G ^D | W JO | S |
|-----------|-------|---|----|----------------|------|---|
| %UDFNH← | \$ | | | - | | |
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| %LFKRV | \$ | | | - | | |
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| %RHKP | \$ | | | - | | |
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| \$QLYHUVi | \$ | | | - | | |
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^D&RKHQ¶V G ±GH_VSUH]tYHO ±GSHTX_HQR G ±Pp_GLR

2 WHVWH-OKLQHQH\ IRL XWLOL]DGR QD FRPSDUDomR GRV UHVXOWD
SR \$ FRP DTXHOHV REWLGRV SHOR JUXSR % HP FDGD TXHVWmR LQGL
REVHUWRIXTXH DV GLIHUHQoDV HQWUH RV UHVXOWDGRV GRV GRLV JUX
VHJXLQWHV DYDOLDo}HV GR FRQFHLWR IUHQWH SHOR WHG/RVH GH %
FRQFHLWR ~OWLPR SHOD KLVW\$ULD)HOL] \$QLYHUVI\$ULDFRHLWR
PXLWRV QR WHVWH8GH %UDSFNHQ GR FRQFHLWR DR UHGRU QRV WI
%UDFNHQ- S \$ &DVD GRV %LFKRV S H)HOL] \$QLYHUVi
ULR - S GR FRQFHLWR PHQRV QR VHVWH GH %RHKP
&RQIRUPH LQGLFDGR SHOD 7DEHOD R GHVHPHQKR GR JUXSR \$ IRL
FRQFHLWR IUHQWH SHOR WHVWH GH %RHKP H GR FRQFHLWR PXLWR
DV RXWUDV FLQFR TXHVW}HV TXH DSUHVHQWDUDP GLIHUHQoDV VLJQL
JUXSR % IRL VXSHULRU DR GR JUXSR \$

2 WHVWH-GTxDxUDGR GH LQGHSHQGrQFLD IRL XWLOL]DGR SDUD Y
SHQKR GDV FULDQoDV GR JUXSR % IRL LQGHSHQGHQWH GD LGDGH KR
YDULiYHLV QDV VHJXLQWHV TXHVW}HV QD DYDOLDomR GR FRQFHLWR
Ø S QR FRQFHLWRØIUHQWH\$ DR UHGRU
S H PHQRØ S QR WHVWH GH %RHKP 3DUD RV UH
WRWDLV GRV LQVWUXPHQWRV GH DYDOLDomR QmR IRL LGHQWLILFDG
GRV VXMHLWRV

2 PHVPR WHVWH IRL XWLOL]DGR SDUD YHULILFDU VH RV GHVHPSh
ERV RV JUXSRV IRUDP LQGHSHQGHQWHV GR VH[R 6RPHQWH QR JUXSR
omR HQWUH DV QDULYDQFLDmR GRV VHJXLQWHV FRQFHLWRV IUHQWH
GH %UDFØHQ S \$ &DVD GRV ØLFKRV S UHGRU QR

WHVWH GH %RHKP S PHQRV QD KLVWYULD \$ &DVD GR%LFKRV
1HVVHV FDVRV RV UHVXOWDGRV IRUDP VXSHULRUHV SDUD RV VXMH
)RUDP FRPSDUDGDV DV FULDQoDV FRP SDUDOLVLD FUHEUO XQLO
:KLWQ@mR LGHQWLILFRX GLIHUHQoD QD DYDOLDomR GH FDGD FRQFHLWR
WUXPHQWRV W\$HMMX@HHQWRQWURX GLIHUHQoD VLJQLILFDQWH VRWHQWH G
S @ VHQGR TXH DV FULDQoDV FRP SDUDOLVLD XQLODWHUD
FHQWDJHP GH DFHUWRV GR TXH DV FULDQoDV FRP SDUDOLVLD ELOD

&RUUHODomR HQWUH RV GDGRV H FRQILDELOLGDGH GRV LQVWUXPHQV
&RQVLGH-UDHQ@R UHVXOWDGRV WRWDLV GRV LQVWUXPHQWRV GH DYD
ILFLHQWH 3HDUVRQ GH &R@BPI@QW@R R@UTR@XOWLRQGLFRX FRUUHODo}HV PRG
WHVWH GH %UDFNHQ H D KLVWYULD \$ &DVD@W@R@%LW@RWH GH %UDFNHQ
GH %RH@P HQWUH R WHVWH GH %UDFNHQ H D KUVWYULD@W@W@QLY
D KLVWYULD \$ &DVD GRV %LFKRV @ R WHVWQWQJHH %RWM@RWH GH %RHKP H
ULD)HOL] \$QLYHUViULR HQWUH DV GXDV KLVWYULD
3DUD HVWLPDU D FRQVLVWrQFLD LQWHUQD GRV LQVWUXPHQWRV XW
WH DOID GH &URQE-D@K H@HYRDOQ/G@RUDomR DV TXH@W}HV XWLOL]DGDV
PHLR GHVWH FiOFXOR IRL R@EXADLOG R. Y@HO@W@RQEDFK HVWDQGDUGL]DGR LJ
TXH VXJHUh TXH Ki FRQVLVWrQFLD LQWHUQD QRV LQVWUXPHQWRV

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7DO FRPR REVHUYDGR SRUD@RFM@D@W@D@D@DUWLFLSDQWHV GHPRQVW
SHODV QDUUDWLYDV ID]HQGR SHUJXQWDV VREUH RV SHUVRQDJHQV RX
FRQWDGDV QRYDPHQWH FRQWXGR DOpP GR FRQWH[WR GDV KLVWYULD
UHQWHV DVSHFWRV GDV DYDOLDo}HV SRGHP WHU LQIOXHQFLDGR R GHV
omR ED-WH@L@R IDWR GH TXH DV GXDV KLVWYULD DSUHVHQWDUDP GLIHU
WUH VL VXJHULQGR TXH R FRQWH[WR GD KLVWYULD QmR H[HUFHX JUDQ
GDV FULDQoDV GH PRGR JHUDO \$OpP GLVVR DV FRPSDUDo}HV HQWUH R
%LFKRV H HQWUH R WHVWH GH %RHKP H D KLVWYULD)HOL] \$QLYHUViULR
QLILFDQWHV 2X VHMD DV KLVWYULD QmR GLIHULUDP GRV WHVWHV DR
UHODomR DR WD@DQKR GR FDGHUQR GH ILJXUDV j GLVS@V@LomR GDV RSc
FRQFHLWXDO QR TXDO FDGD FRQFHLWR HUD DSOLFDGR VXJHULQGR TXH
LQWHUIHULGR QRV UHVXOWDGRV GRV LQVWUXPHQWRV

\$ PHVPD VLWXDomR IRL REVHUYDGD HP UHODomR DRV UHVXOWDGRV
QmR IRL R FDVR GR JUXSR % 1HVWH R tQGLFH GH DFH@W@R@L@R@E@H@R@W@
HQTXDQWR TXH R UHVXOWDGR GD KLVWYULD)HOL] \$QLYHUViULR IRL Wm
WUXPHQWRV VXJHULQGR TXH R FRQWH[WR GDV KLVWYULD H[HUFHX XPI
GRV FRQFHLWRV SHODV FULDQoDV FRP GHILFLrQFLD 1D DYDOLDomR GH
WLILFDU D LQIOXrQFLD GH XPD ~QLFD FDUDFWHutVWLFD

&D]HLUR \$30 /RP{QDFR -) % &H@Y@H@P@R@C@R GH FULDQoDV FRP H VHP GHILFLrQFLD HP WHVWH GH FRQFHLWRV WUDGLFLRQD
GH KLVWYULDV 15@INDQ@W@HULQVW %UDV 7HU 2FXS 5LR GH -DQHLUR Y

3DUD R FRQFHLWR IUHQWH ~QLFR HP TXH R WHVWH GH %RHKP
ViULR IRL WmR ERP TXDQWR R GRV RXWURV GRLV LQVWUXPHQWRV VX
KLVWyULDV H[HUFHX XPD PDLRU LQIOXrQFLD QD XWLOL]DomR GRV FRC
FLrQFLD

1D DYDOLDomR GH FDGD FRQFHLWR QmR p SRVVtYHO LGHQWLILF
FDUDFWHUtVWLFD 3DUD R FRQFHLWR IUHQWH ~QLFR HP TXH R WHV
\$QLYHUViULR DSUHVHQWDUDP PHOKRUHV UHVXOWDGRV KDYLD GLIHU
o}HV GH UHVSrvWD QHVWHV LQVWUXPHQWRV HUDP DSUHVHQWDGRV
GLIHUHQWHV SRVLo}HV HP UHODbHLURQDFXb RHE[MHWB]WUR SDFRWHV GH D
FLRQDGRV HP UHODomR D XPD SDQHOD QRV R[&WIHRM]Q[KDD]LBDTG[D]WUF
TXDO DFRPSDQKDGR SRU XP REMHWR PHQRU H[TXDWUR FDVDV H TX
SRVLo}HV \$VV-LPH \$R[R]SRU TXH DV FULDQoDV WLYHUDP PDLV IDFLOLGD
GLVSRVLomR HVSDLDO GH TXDWUR REMHWRV HP UHODomR D XPD ~QL
SDUDU TXDWUR REMHWRV HP UHODomR D TXDWUR UHIHUrQFLDV

1D DYDOLDomR GRV FRQFHLWRV DPERV ~OWLPR H PHQRV R
&DVD GRV %LFKRV DSUHVHQWDUDP DV PDLRUHV SRUFHQWDJHQV GH D
DPERV RV RXWURV WHVWHV VROLFLWDYDP TXH D FULDQoD DSRQWD
^DSRQWH SDUD DPERV RV FDYDORV' GH IRUPD LQFRQGL]HQWH FRP D
GR DV TXDLV GHYHULD VHU HVFROKLGD DSHQDV XPD RSomR GH UHVS
4XDQWR DR FRQFHLWR ~OWLPR VXD DSOLFDomR HP GLIHUHQWH
GH WHU LQWHUIHULGR QRV UHVXOWDGRV R WHVWH GH -QURDQRHQ H \$
GRPtQLR WHPSRUDO H[^4XDO FULDQoD FRPHX D ~OWLPD PDom" R
QR QR GRPtQLR HVSDLDO H[^4XDO FULDQoD p D ~OWLPD GD ILOD"
DOpP GD GLVSRVLomR HVSDLDO GDHV LDGOMQHMLQIDFNDLWY R[X W\$JRDQHGLIHUHQ
LQVWUXPHQWRV D KLVWyULD)HOL] \$QLYHUViULR FRPSDUDYD JUDQGH
WURV WHVWHV JUDQGH]DV FRQWtQXDV OtxLGRV DOLPHQWRV QR W
OL] \$QLYHUViULR DV RSo}HV FRUUHWDV HUDP DV SULPHLUDV HQTXD
WUXPHQWRV RV UHFLSLHQWHV TXH DSUHVHQWDYDP PHQRV FRQWH~
FRQGL]HQWH FRP XPD VHTXrQFLD OyJLF D GH HYHQWRV

\$V GXDV KLVWyULDV DSUHVHQWDUDP GLIHUHQoD VLJQLILFDQWH
LQIHULRU FXMD DSOLFDomR SRGH WHU VLGR IDFLOLWDGD QD &DVD
TXDGUDQWHV GDV DOWHUQDWLYDV RX SHOD DSUHVHQWDomR GH TXDW
FRPSDUDGRV D TXD-WUHRRHUEQFHLDWRYUYR[X W\$JRDQHGLIHUHQ
REMHWRV HQWUH VL SRWHV HP GLIHUHQWHV SUDWHOHLUDV GH XP D

3DUD RV FRQFHLWRV HQWUH H PXLWRV R WHVWH GH %RHKP D
FRUHV \$ GLVWULEXLomR HVSDLDO GDV DOWHUQDWLYDV SRGH WHU
QRV WHVWHV GH %RHKP H)HOL] \$QLYHUViULR RV -JUHK \$RDVG RHD ROEDMHWH
GR RV RXWURV WHVWHVQ R[SUHPV]RQDQYDQWHV \$SHVDU GHVWD VPHOH
WHVWHV GH %RHKP H)HOL] \$QLYHUViULR R UHVXOWDGR QD KLVWyUL
FRQWH[WR GD QDUUDWLYD WHQKD IDYRUHFLGR D DSOLFDomR GR FRQ
VLWXDo}HV PDLV SUy[LPDV DR FRWLGLDQR GDV FULDQoDV 3DUD R FR

R WHVWH GH %RHKP DSUHVHQWDYD URVWRV GH FULDQoDV Mi D
DSUHVHQWDYD FDL[D V GH RYRV UHODFLRQDG DV j SUHSDUDomR GH XI
1D DYDOLDomR GR FRQFHLWR DR UHGRU R WHVWH GH %UDFNHC
ULRUHV R TXH SRGH WHU RFRUULGR SRU GLILFXOGDGH QD YLVXDOL]
QHVWH WHVWH - URHVIHRUEMQHFVIB VFDFKRUURV HUDP HQYROWRV SRU REMH
FRUGDV HQTDXDQWR QRV RXWURV WHVWHV SHTXHORIVHRUEQFHLDV UR
SRU H[HPSOR QD &DVD GRV %LFKRV RV SDWLQKRV HVWDYDP DR UH
2V UHVXOWDGRV GHVWD SHVTXLVD FRQILUPDP GH PRGR JHUDO
FULDQoDV HP DYDOLD}HV GH FRQFHLWRV EiVLFRV YDULD HP IXQomR
%RHKGPH PDQHLUD VPHOKDQWH REVHUYRX TXH GRLV LWHQV TXH D
SRGHP DSUHVHQWDU QtYHLV GH GLILFXOGDQXIDQLG/RVIDQFWRDQ&DUDSWH
XP WHUPR VHX XVR SHUPDQHFH FRQGLFLRQDG DR FRQWH[WR QR TX
SRXFRV YDL VHQGR DPSOLDGR SDUD RXWUDV VLWXDo}HV (VWD SURS
DV FULDQoDV SRGHP WHU GHVHPSHQKRV GLVWLQWRV HP GLIHUHQWH
WR TXDQGR HVWH DLQGD QmR VH HQFRQWUD WRWDOPHQWH GRPLQDC
GLYHUVDV

\$GHPDLV WHP VLGR FRPSURYDGR TXH R GRPtQLR FRQFHLWXDO E
DYDQoDU GD LGDGHHVWD SHVTXLVD QD FRPSDUDomR HQWUH DV FULD
FHUHEUDO GH GLIHUHQWHV IDL[DV HWiULDV R IDWRU LGDGH LPSDFW
TXDWUR GHQWUH TXHvw}HV \$OpP GLVVR HPERUD DV FULDQoDV GR
OKDV GR TXH DV FULDQoDV GR JUXSR \$ R JUXSR % REWHYH GHVHPSH
SHULRUHV HP SRXFDV TXHvw}HV GDGRV TXH UDWLILFDP R DWUDVR Q
JUXSR GH FULDQoDV FRP GHILFLrQFLD WDO FRPR HQFRQ\$DIDGR HP R
SOLDomR GD IDL[D HWiULD GR *UXSR % p HFRQDIF]NTOQHHLQRGR PDRPHWDO
SURFHGLPHQWR HP FDVRV GH FULDQoDV FRP GHILFLrQFLDV 6REUH HV
UHVVDOWDU TXH DV FULDQoDV SDUWLFLSDQWHV QmR GRPLQDYDP FRP
DGRV YLWR TXH QHQXP D GDV TXHw}HV REWHYH GH DFHUVRV GR P HMP R P RGR TXH QH
QKXPD FULDQoD DYDOLDGD DFHUWRX GDV TXHvw}HV R TXH SRGH
DQoDV PDLV YHOKDV

'H PDQHLUD FRPSDWtYHO FRP D WHRSUHLVDT XGLHV 9 GJRRWHWN WrP FRPSUR
GR TXH DV FRQGLo}HV VRFLRDPELHQWDLV SRGHP IDYRUHFHU RX SUHM
FRQFHLWXDO GH FULDQoDV FRP` RX VHP G\$M\FLRQK PDDWUDVR QHVWH S
FHVVR QmR GHYH VHUVRPDGR FRPR XPD FRQVHTXrQFLD QDWXUDO GD
WRGDV DV RSRUWXQLGDGHV GH DSUHQGL]DJHP GHYHP VHUVJDUDQWLGD
D SULRUL -5HIRERBD LVVR D LPSRUWKQFLD GD DYDOLDomR GH FRQFHL
GHILFLrQFLD H R RIHUUHFLPHQWR GH HVWLPXODomR SDUD R VHX GHVH

7DO WHPD p GH HVSHFLDO SHUWLQrQFLD SDUD D SUiWLFD GD 7H
Do}HV EXVFDP IDYRUHFHU D SDUWLFLSDomR GD FULDQoD HP GLIHUHQ
RV DPELHQWHV GRPLFLOLDU HVFRodu H FRPXQLWiULR 6HQGR DV DW
HVSDoRV SULYLOHJLDGRV SDUD R GHVHQYROYLPHQWR GH FRQFHLSWRV
QDO SRGH FRQWULEXLU DR SURSRUFLRQDU H[SHULrQFLDV HP TXH RV

GRV GH PDQHLUD HV \$RGW DQMD DR IDYRUHFHU D SDUWLFLSDomR DWLYLGDGHWFBOPUHV H HVFRODUHV R WHUDSHXWD RFXSDFLRQDO W FRQWLQXLGDGH GR SURFHVVR GH GHVHQYROYLPHQWR GH FRQFHLWRV

\$LQGD QR TXH VH UHIHUH DRV UHVXOWDGRV DSUHVHQWDGRV SH DXWRUHV LQGLTXHP TXH R JUDX GH FRPSURPHWLPWHRQWR BRWIRQ SRV V YROYLPHQWR FRJQLWLYR GD FULDQoD FRPVSDDUDOUVLYDHOHQHIEUDOPRV LPSRUWDQWH SDUD WRGDV DV FRPSDUDo}HV 3RUpP QmR VH SRGH LJ NHQ DSUHVHQWRX GLIHUHQoD VLJQLILFDQWH QD FRPSDUDomR HQWUHEUDO XQLODWHUDO RX ELODWHUDO FRP PHOKRU GHVHPSHQKR DSUHV PDLV D JUDYLGDGH GR TXDGUR GDV FULDQoDV H[FOXTGDV GD SHVTXL TXH FULDQoDV FRP JUDYHV GHILFLrQFLDV PRWRUDV VmR GvHFLV GH FRQVLGHUDU FRP FDXWHOD RV HVFRUHV GH WHVWHV DSOLFGRV D H

2V UHVXOWDGRV GRV GRLV JUXSRV IRUDP DGLFLRQDOPHQWH DQD GRV SDUWLFLSDQWHV 7DO FRPR REVHUYDGR SDUD DOJXPDV TXHVV}H RPLQJ H \$WNLQV WDPEpP REVHUYDUDP TXH DV PHQLQDV DSUHVHQW UHV

(PERUD RV UHVXOWDGRV QmR FRQILUPHP D S-MLHP D]IJDQGDW TKLHV/Wy HODV VmR WmR DGHTXDGDV TXDQWR RV WHVWHV DWUBRGP\$D BQD]H & R FRP GLIHUHQoDV VLJQLILFDQWHV D KLVWYULD \$ & DVD GRV %LFKRV D GRV VHJXLGD SHOR WHVWH GH %UDFNHQ SHOD KLVWYULD)HOL] \$QL \$OpP GLVVR R FRHILFLHQWH GH FRUUHODomR GH 3HDUVRQ REWLGR H %UDFNHQ IRL SUy[LPR DR REWLGR HQWUH RV WHVWHV H DV KLVWYULD GHVWH WLSR GH IHUUDPHQWD SDUD D DYDOLDomR FRQFHLWXDO

%RHKPJHFRPHQGD P~OWLSORV SDVVRV SDUD D DYDOLDomR GRV P VH DVVLP FRQVLGHUDU TXH RV GLIHUHQWHV LQVWUXPHQWRV WHQKD GHYHQGR QHJDU D XWLOLGDGH GR WHVWH GH %RHKP TXH WHP XPD D GXDV YH]HV FDGD FRQFHLWR 7DO FRPR REVHUYDGR SRU %RHKP GR PHVPR FRQFHLWR SRGHP DSUHVHQW DU QtYHLV GH GLILFXOGDGH GLVW VLGDGH GD DYDOLDomR GRV FRQFHLWRV HP GLIHUHQWHV FRQWH[WRV YROYLPHQWR GH QRYR-WHWMMXJHULUSBGFHRPSDUDomR GH GLIHUHQWHV R QKRV D SUHIHUrQFLD SRU ILJXUDV PDLRUHV H GLYLGGLGDV HP TXDGUD PHVPD RUJDQL]DomR GDV DOWHUQDWLYDV HP WRGDV DV TXHVV}H

&RQWXGR- VGIHSRNQGHUDU TXH IRUDP XWLOL]DGRV WHVWHV DLQGD GDGRV SDUD R FRQWH[WR EUDVLOHLUR EHP FRPR HVWHV QmR IRUDP H[FHomR GD HWDS D GH VHOHomR GRV FRQFEHILWRFQDUTXDSOR PDRGHRK P WHJUDOPHQWH VRIWFLOR\$DUD FULDQoDV HQWUH FLQFR DQRV H FLQFR RXWUR ODGR HVWH HVWXGR GH FXQKR H[SORUDWYULR QmR YLVDYD PHQWRV SDUD XVR FOtQLFR QR %UDVLO IDWR TXH MXVWLILFD R XVR YDOLGDomR 'HVWH PRGR SDUD TXH SRVVDP VHU XWLOL]DGRV SRU SDYDOLDomR GH FRQFHLWRV EiVLFRV SRU FULDQoDV EUDVLOHLUDV VmR GHVHQYROYLPHQWR GH WHVWHV HP IRUPDWR GH KLVWYULDV LQIDQ

WUDQVFXOWXUDO H D GHWHUPLQDomR GDV SURSULHGDGHV SVLFRPpW
DPHULFDQRV HWDSDV LPSUHVFLQGtYHLV SDUD D HTXLYDOrQFLD HQW
VXD V YHUV}HV WUDGX]LGDV SDUD RXWURV FRQWH[WRV

\$GHPDLV - QHYFRQVLGHUDU RXWUDV OLPLWD{HV GHVWD SHVTXLW
QD ORFDOL]DomR GH FULDQoDV FRP GHILFLrQFLD H R QmR FRQKHFLPH
SHOD SHVTXLVDGRUD 7DPEpP QmR VH SRGH H[FOXLU D SRVVLELOLD
FHLWRV SHODV FULDQoDV SDUWLFLSDQWHV QR GHFRUUHU GR HVWXG
WHV H DR HQVLQR HVFRDU HPERUD D DOWHUQKQFLD GD RUGHP GH I
WHQKD REMHWLYDGR UHGDX]LU R LPSDFWR GH WDO YDULiYHO QRV UHW
FRPSDURX RV WHVWHV WUDGLFLRQDLV FRP XP ~QLFR IRUPDWR DOWH
YHVWLJDomR GD DYDOLDomR GH FRQFHLLWRV HP RXWUDV FRQGL{HV
oDV HP DWLYLGDGHV FRWLGLDQDV H O~GLFDV

&21&/86-2

2 FRQWH[WR O~GLFR IRUQHFLGR SHODV KLVWYULDV QmR VH PRVW
WRGDV DV FRPSDUD{HV PDV RV UHVXOWDGRV GHVWD SHVTXLVD LQG
DGHTXDGDV SDUD D DYDOLDomR GH FRQFHLLWRV EiVLFRV TXDQWR RV
ODGR D SHVTXLVD FRUURERUD D KLSyWHVH JHUDO GH TXH R GHVHPS
IXQomR GD IRUPD GH DYDOLDomR VXJHULQGR D QHFHVVLGDGH GH VH
VHQYROYLPHQWR GH LQVWUXPHQWRV GH DYDOLDomR FRQFHLLWXDO

5HIHUrQFLDV

&D]HLUR \$30 /RP{QDFR -)% 9\JRWVN\ H VXD LQWHUIDFH FRP DV WH
DSUR[LPD{HV H GLVWDQFLDPHQWRV 3VLFRORJLD (VFRDU H (GXFDF
'2, -

%RHKP \$(%RH%RHKP 7HVW RI %DVLF &RQFHSHV UG HG 6DQ \$QV
3V\FKRORJLFDO &RUSRUDWLRQ

%UDFNHQ %% %UDFNHQ %DVLF &RQFHSHV UG HG 6DQ \$QWRQLR
3HDUVRQ

9\JRWVN\ /6 \$ FRQVWUXomR GR SHQVDPHQWR H GD OLQJXDJHP 6m
2ULJLQDO SXEOLFDR HP

9\JRWVN\ /6 3VLFRORJLD 3HGDJyJLF D HG 6mR 3DXOR 0DUWLC
SXEOLFDR HP

%RHKP \$(\$VVHVVPHQW RI %DVLF 5HODWLRQDO &RQFHSHV ,Q %UD
FDWLRQDO \$VVHVVPHQW RI 3UHVFKRRO &KLOGUHQ UG HG 0DK:DK
/LEUDU\ S

3DQWHU -(9DOLGLW\ RI WKH %UDFNH5QH YLDVHLOF 1&RQFHSHV 6FDQOH SH
PDQFH RQ WKH 0HWURSROLW 6FDQOH GQWLRQ H VRWKUQDO RI 3V\FKRHGX
\$VVHVVPHQW - '2,

&D]HLUR \$30 /RP{QDFR -)% &HIVHIPSRIQCR GH FULDQoDV FRP H VHP GHILFLrQFLD HP WHVWH GH FRQFHLLWRV WUDGLFLRQD
GH KLVWYULDV 15QINDQW 15QINDQW %UDV 7HU 2FXS 5LR GH -DQHLUR Y

%RHKP \$(%RHKP VFKRRO %RHKP 7HVW RI %DVLF &RQFHSWV UG H
7; 7KH 3V\FKRORJLFDO &RUSRUDWLRQ

%RHKP \$(7HVWH GH FRQFHLWRV EiVLFRV GH %RHKP 5LR GH -DQHL
&D]HLUR \$30)RUPDomR GH FRQFHLWRV SRU FULDQoDV FRP SDUDO
H[SORUDWyULR VREUH D LQIOXrQFLD GDV EULQFDGHLUDV >'LVVHUWDo
6mR 3DXOR

&D]HLUR \$30 /RP{QDFR -)%)RUPDomR GH FRQFHLWRV SRU FULDQo
EUDO XP HVWXGR H[SORUDWyULR VREUH D LQIOXrQFLD GDV DWLYLGD
H &UtWLFD - '2, 6 -

\$JXLDU -6 -RJRV SDUD R HQVLQR GH FRQFHLWRVFR/ODWxDUeGH HVFU
&PSLQDV 63 3DSLUXV

5RPHR '00 &LRQL 0 %DWWJDJOLD /5 3DGSHPWuX0DR]RQJHRVV PRWRU
DQG FRJQLWLYH IXQFWLRQV LQ FKLOGUHQ ZLWK FUHEUDO SDOV\ JH
QDO RI 3DHGLDWULF 1HXURORJ\2, M HMSQ

&KHQ .+ &KHQ &< +VX +& &KHQ &/ /LQ &+ +VLHK :& &KBSQ &0 +R
RI GHYHORSPHQWDO SURILOHV LQ FKLOGUHQ ZLWK VSDVWLF TXDGULS
0HGLFDO -RXUQDO - 'LVSQTYHO KWWS ZZZ QFEL QOP QLK JR
SXEPHG

3IHLIHU /, &RPSURPHWLPHQWR PRWRU H DTXLVLomR GH KDELOLGD
SRUWDGRUDV GH SDUDOLVLD FUHEUDO 7HPDV VREUHLGSRQHQYROYLP
YHO KWWS SHVTXLVD EYV EU E-UDVLO UHVRXUFH SW SVL

/DP{QLFD '\$& 9LWR /30 5RXVWRQ -& :LWKDNHU 0(5LEHLUR /0 \$Y
VHPkQWLFR GD OLQJXDJHP HP SDUDOTWLFRV FUHEUDLV'LQDOXVYLWD
SRQTYHO KWWS ZZZ XVF EU ELEOLRWHD VDOXVYLWD VDOXVYLWDBY

0HOOR &% 0XVNDW 0 ;DYLHU&D W%&XRIQIRJ2W\$LRQ VNLOOV DQG UHFD
GHPDJHG FKLOQGRXHQLSOH FDVH VWXG\ \$UTXLYRV GH 1H\$URSVLTXLD
- '2, 6 - ;

)RQWHOOSH 0- 6LP}HV 0*)DULDV 6+)RQWHOOSH 5*6 0HWGRGROR.
FD GLUHWUL]HV SDUD D HODERUDomR GH XP SURWRFRO GH SHVTXLVD
QD 'LVSQTYHO KWWS ILOHV EYV EU X\$OOG 6
D SGI

%D[0 *ROGVWHLQ 0 5RVHQEDXP 3 /HYLWRQ \$ 3DQHWK 1 3URSRV
VLILFDWLRQ RI FUHEUDO SDOV\ \$SULO 'HYHORSPHQWDO 0HGLF
- '2, 6 - ;

3DOLVDQR 5 5RVHQEDXP 3 %DUWOHWW (/5YL*QJRWWRQWRU))&QF
WLRQ &ODVVLILFDWLSRQ 6HVWBRQG 5HYLVHG +DPLWRQ &DQDGD &DQ
&KLOGKRRG 'LVDELOLW\ 5HVHDUFK

&D]HLUR \$30 /RP{QDFR -)% &HDIHIPSRIQ&R GH FULDQoDV FRP H VHP GHILFLrQFLD HP WHVWH GH FRQFHLWRV WUDGLFLRQD
GH KLVWULDV 15QINDQWLMHULQVW %UDV 7HU 2FXS 5LR GH -DQHLUR Y

0RWWD \$% (QXPR 65) 5RGULJXHV 003 /HLWH / &RQWDU KLVWYULD
DYDOLDomR DVVLVWLGD GD QDUUDWLYD LQIDQWLO ,QWHUDomR HP 3V
'2, SVL Y L

1HOVRQ . /DQJXDJDH LQ FRJQLWLYH GHYHORSPHQW HPHUJHQFH RI
EULGJH 8. &DPEULGJH 8QLYHUVLW\ 3UHVV

(LVHQEHUJ =: 2 GHVHQYROYLPHQWR GH QRo}HV WHPSRUDLV DWUD
JLD 5HIOH[mR H &UtWLFD - '2, 6 -

.RHUEHU 6 6RGLDQ % 3UHVFKRRO FKLOGUHQ\ V DELOLW\ WR YLVX
RSPHQWDO 6FLHQFH - '2, M - [

/RP{QDFR -)% 3DXOD)9 0HOOR &% \$OPHLGD)\$ 'HVHQYROYLPHQW
UDGLJP D GDV WUDQVIRUPDo}HV 3VLFRORJLD 7HRULD H'2HVTXLVD
6 -

+DUULQJWRQ 0 'HVMDUG5QODW6LRHDVK&SV EHWZHHQ HDUO\ FKLOG
VFKRRO UHDGLQHV VNLOOV LQ \RXQJ FKLOGUHQ ZLWK KHDULQJ ORV
4XDUWHUO\ - '2,

6RQ 6+ 0RUULVRQ)- 7KH QDWXUH DQG LPSDFW RI FKDQJHV LQ KR
RQ GHYHORSPHQW RI ODQJXDJDH DQG DFDGHPLF VNLOOV LQ SUHVFKR
3V\FKRORJ\ - '2, D

;LDRPLQJ / \$WNLQV 0 (DUO\ FKIHQ\$HKURLRHQ F R PDSQW\ H JQLWLHYH DQG
GHYHORSPHQW 3HGLDWULFV - 'LVSRQtYHO KWWS
SHGLDWULFV DDSSXEOLFDWLRQV RUJ FRQWHQW IXOO KWPO

%RHKP \$VHVVLQJ FKLOGUHQ\ V NQRZOHGJH RI EDVLF FRQFHSHWV
SDXV 3: +DQGERRN RI SV\FKRORJLFDO DQG HGXFDWLRQDO DVVHVVP
3V\FKRORJLFDO &RUSRUDWLRQ S

%HDWRQ '(%RPEDUGLHU & *XLOOHPLQ))HUUD] 0% *XLGHOLQHV
FURVXOWXUDO DGDSWUDMSIRRQW RPIHVDHVXIUH 6SLQH - '2,
- -

(VWH DUWLJR p UHVXOWDQWH GD WHVH GH GRXWRUDGR DSUHVHQWUDQD \$BIOBRSULPH
HP 3VLFRORJLD (VFRDU H GR 'HVHQYROYLPHQWR +XPDQR GR ,QVWLWXWR GH 3VLFROR
VRE D RULHQWDomR GR VHJXQGR DXWRU
7RGRV RV SURFHGLPHQWRV pWLFRV IRUDP DWHQGLGRV \$ SHVTXLVD IRL SUHYLDPHQW
3HTVXLVDV FRP 6HUHV +XPDQRV GR ,QVWLWXWR GH 3VLFRORJLD GD 8QLYHUVLGDGH GH
H SHOR &RPLWr GH eWLFD HP 3HTVXLVDV GD 6HFUHWULD 0XQLFLSDO GH 6D~GH H 'HIIH
5LR GH -DQHLUR 3URWR&ROR Qf -
2 WH[WR p RULJLQDO H LQpGLWR Qmr HVWDQGR HP DYDOLDomR SDUD SXEOLFDomR HP
2V UHVXOWDGRV IRUDP SDUFLDOPHQWH DSUHVHQWDGRV QR ;,9 &RQJUHVVR %UDVLOHL
QHLUR

&RQWULEXLo}HV GDV DXW \$QDV3D XDDW RDUWLGW H-8D]pH\ H B QDQGR %LWHQFRXUW /R{QDFR
SDUWLFLSDUDP GD FRQFHSHoM R GD SHVTXLVD GD HODERUDomR H FRQIHFOmR GRV LQV
GDGRV H GD UHGDomR G\$QBDQOD/FGLDN RDUWLQSD &WJHFLWSRRX GD HODERUDomR H FRQIHFO
LQVWUXPHQWRV GH DYDOLDomR H GD UHYLVmR GR PDQXVFULWR

\$JUDGHFLPHQ\$WRFLDomR)OXPLQHQVH GH 5HDELOLWDomR \$VVRFLEDomR 3HVWDOR]]L GH (GXFDomR H 6HFUHWLDULD 0XQLFLSDO GH 6D~GH H 'HIHVD &LYLO GD 3UHIHLWXUD 0X0XQLFLSDO GH (GXFDomR GD 3UHIHLWXUD GH 1LWHUyL &HQWUR 0XQLFLSDO GH 5HDELOLWDomR (QJHQKRGH 'HQWUR 3ROLFOtQLFD 0DQRHO *XLOKHUPH GD 6LOYHLUD \$OEHUWR GH 2OLYHLUD (VFROD 0XQLFLSDO 5HYHUhQGR 0DUWLQ /XWKHU .LQJ (VFROD WUR (VFROD (VSHFLDO 0XQLFLSDO 0DUO\)URLV 3HL[RWR (VFROD 0XQLFLSDO 6KDNHVS (VFROD 0XQLFLSDO -DUGLP GH ,QIKQFLD 0DXUtFLR &DUGRVR (VFROD 0XQLFLSDO 7DJRU 7DXQD\ (VFROD 0XQLFLSDO /RQGUHV (VFROD 0XQLFLSDO 6DUPLHQWR (VFROD 0XQLFLSDO &HQWUR ,QWHJUDGR GH (GXFDomR 3~EOLFD 0DUHFKDO -XOLR &DHWDQR +RUWD %DUERY

6XEPhWLGR HP

\$FHLUR HP

3XEOLFDFGR HP

&D]HLUR \$30 /RP{QDFR -)% &HDYHIPSRISS&R GH FULDQoDV FRP H VHP GHILFLrQFLD HP WHVWH GH FRQFHLWRV WUDGLFLRQD
GH KLVWyULDV 15QINDQ,WHLQVW %UDV 7HU 2FXS 5LR GH -DQHLUR Y