

! "#\$%&' () ' () ' & * + ' " , - () - & (. \$ / " - & (. + 0 & (. / 1 % \$ 2 . 3 4 - () - (5 % & 1 ' * . () ' (6 ' 7 - * ' ") . 3 4 - (8 9 - : - ; 5 6 (+ . : . (. (* % 1 % < . 3 4 - () ' (' = . & 4 - (' (+ : - * - 3 4 - () . (: ' 1 ' " 3 4 - (

! "#\$%&' () * & + , & - . + / # + , ! " # 0 & 1 # / % 2 " . , & 3 , + , " / % * & 3 # / 4 " . * & + , & - 2 5 , " + # 0 & 6 % / \$, & ' () * & 7 " 8 4 9 / " # & : # / ; % * # # 0 & < # . + / % & 6 % * = & > " \$ % # &

! ! "#\$%&' # () (% * (+ , ' -) (+ * (% * .) - + * / & + ' ' + * 0 ! 1 , . 2 3 4 *

" ! "#\$%&' # () (% * (+ * 5) 6 % * (+ * 7 # + * (+ ' * 8 # ' + ' * 0 ! 1 9 8 9 1 : 8 4 *

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- ; * 4 / # 8 4 % ; # ' -) " < % * , (= <) - # + " >) < % ' *) * ? # @ ? * (& + A + = - * &) - % * # ' ' - ? % * < + = & ' % ' * + > > % & % (B * 9 " " * < + " - & # C = - # " @ * - + * - ? # " * & % (= < - # + " D * - ? # " *) & - # < 6 % * A & % ' % " - ' *) * 7 % < + E E % " () - # + " * 8 F ' - % E * - ?) - * # " - % @ &) - % ' * 2 < - # \$ % * . % - ? + (+ 6 + @ # % ' * G # - ? * , (= <) - # + ") 6 ; ;) -) * . # " # " @ * - % < ? " # H = % ' * - + * E # # @) - % * - ? % * & # ' I ' ' + > * ' - = (% " - ' * # (% " - # > # % (*) ' * A & + " % * - + * >) # = & % *) " (* (& + A + = - *) " (* % " ?) " < % * & % - % " - # + " B * 3 ? % * ' F ' - % E * G) ' *) A A 6 # % (* - + *) * ' = C % < - * - + *) " 6 F K % * ' - = (% " - * A % & > & E) " < % D *) " (* C) ' % * (+ * " - ? % * & % ' = 6 - ' * + C -) # " % (D * - ? % & % * G) ' *) " # " < & %) ' % # " " - ? % * < 6) ' ' *) \$ % &) @ % *) " (* % > > % < - # \$ % * A) & - # < # A) - # + " * # " " - ? % * 6 %) & " # " @ * A & + < % ' ' D * < ?) &) < - % & # K % (*) ' * A + ' # - # \$ % *) " (* A & + E # # " @ * A + # " - ' B &

> , * (5 % 8 2 * , (= <) L M + *) * ; # ' - N " < #) % " > & % " -) * = E *) 6 - + * 0 " (# < % * (% * % \$) ' M + " " + * < = & ' + ' * + > % & -) (+ ' D * P) &) * < + " - & # C = # & * < + E *) * ' =) * & % (= L M + D * % ' - % *) & - # @ + *) A & % ' % " -) * = E * 8 # ' - % E) * (% * 7 % < + E % " () L M + * H = % * # " - % @ &) * . % - + (+ 6 + @ #) ' * 2 - # \$) ' * Q ' - R < " # <) ' * (% * . # " % &) L M + * (% * ; ;) (+ ' * , (= <) < # + ") # ' D * A) &) * E # # @) & * + ' * & # < + ' * (+ ' *) 6 = " + ' * # (% " - # < # <) (+ ' * < + E + * A & + A % " " + ' *) * & % A & + \$) L M + * % * % \$) ' M + * % * A + - % " < #) # K) & *) * A % & E) " S " < #) D * : * # ' - % E) > + # *) A 6 # <) (+ * % E * = E) * (# ' < # A 6 # ") * A) & *) *) " T 6 # % * (% * (% ' % E A % " ? + * (+ ' *) 6 = " + ' * % * < + E * C) ' % " " + ' * & % ' = 6 -) (+ ' * + C - # (+ ' * \$ % & # < + = U ' % * + *) = E % " - + * () * E R (#) * () * - = & E) * % *) * A) & - # < # A) L M + * % > % - # \$) * " + * A & + < % ' ' + * (% *) A & % " (# K) @ % E D * <) &) < - % & # K) (+ * < + E + * A + " - + ' * A + ' # - # \$ + ' * %) + * E % ' E + * - % E A + * A & + E # ' ' + & % ' B &

! ! "#\$%&' () * + ' ,

2 - =) 6 E % " - % D *) * , (= <) L M + *) * ; # ' - N " < #) * 0 , ; 4 * - % E * ' % * < + " " + 6 # () (+ * < + E + * E + () 6 # () (% * (% * % " " # " + * < + E * + *) = E % " - + * (+ " " V E % & + * (% *) 6 = " + ' * # " @ & % ' ') " - % ' * % * E) - & # < = 6) (+ ' " " + ' * < = & ' + ' * + > % & -) (+ ' * W " % A * X Y X Z [D * A & + A + & < # + ") " (+ * + *) < % ' ' + *) * A & + @ &) E) ' * (% * H =) 6 # # <) L M + * A % ' ' +) 6 # * A & + > # ' ' # + ") 6 * % > + & E) L M + *) <) (S E # <) D * , " - & % -) " - + D *) % * \$) ' M + * (% *) 6 = " + ' * " % ' ') * E + () 6 # () (% * (% * % " " # " + * R * = E * (+ ' * A & # " < # A) # * A & + C 6 % E) ' % * " > & % " -) (+ ' * A % 6) ' * # " " - # = # L \ % ' * % (= <) < # + ") # * A V C 6 # <) ' % * A & # \$) () ' D * E + - # \$ + * (% * A & % + < = A) L M + * (% * @ % ' - + & % ' * % (= <) < # + ") # * % * A & + > % ' ' + & % ' D * H = % * C = ' <) E * E % # + ' * (% * # (% " - # < # <) & * + ' *) 6 = " + ' *

%E#E#K)&)*A+' '#C##() (%*(%<+&&%&'')*'#=)LM+*W])I%&%-)*6*XYZZ[*W.)"?M%'
%-)*6*XYZZ[*W8#6\$)*%-)*6*XYZ^[*W_+' '-+A+=6+' %-)*6*XYZ` [*Wa=%#&+@)*%-)*6*XYZb[*

* 1%' '%* '%"-#(+D* _+' '-+A+=6+' %-)*6* WXYZb[* &%''')6-)*)* #EA+&-N'<#)* (*)
. #'%&)LM+*(%*;) (+', (=)<#+'')#*0. ; ,4*%)%cA)''M+*(+*='*(')'')' '-R<'<#<)'*
' +C&%+'*(+)'@&)(+'%*)&E)K%''(+)'+'*2EC#%''-%'5#&=) #'(%*2A&%'' (#K)@%E*
02524* (+*'<=&'+' ,); (%\$#(+)'')*%>#<S'<#)''+*A&+<%''+' (%*#(%''-#>#<)LM+*(+'*
)6="+'* A&+A%' '+'*)* &%-%''LM+D*>)-+&*H=%*A+(%*6%\$)&)*%\$)'M+'')'*(#<#A6#)'*
W3)E)() '*-)*6* XYXX[*W3&)' '*-)*6* XYXd[*e=" -)E%' '-%<+E*)*#(%''-#>#<)LM+D* R*
A%&-#''%''-%)*&%)6#K)LM+*(%*=E%' '-(+*+C&%%' '-&)-R@#)'*A%()@f@#<)'*H=%*A+'')E*
<+6)C+&)&*<+E*+*A&+>%'''+&D*E#-#@)&)*A+' '#C##() (%*(%&%-%''LM+*%)A&#E+&)&*+*
A&+<%''+'*(%)A&%'' (#K)@%E*(+'*)6="+'B*1%'')' '<#&=<' '-N'<#)'D*=-#6#K)&)*%'-&)-R@#)*
A%()@f@#<)*()'*. %-(+6+@#)'*2-\$)'D%'A%<#>#<)E%' '-%)*2A&%'' (#K)@%E*])'%) (*)
%E*P&+C6%E)'*02]P4D*A+(%<+''-&#C=#&<+E*A&+>%'''+&%%'*)6="+' '+'<=&'+'*H=%*
>)K%E*='+'*(%*=E*252D*E#-#@)'(+)*A+' '#C##() (%*(%&%-%''LM+*%*%)'M+B*

* !E)*()'?'#Af-%%'*(%A&%\$%'LM+*(%&A&+\$)LM+*%*%)'M+'')*,); *R*)*
=-#6#K)LM+*(%*=E*8#'-%E)*(%*7%<+E%'')LM+*0874*H=%*#''-%@&)*. %-(+6+@#)'*2-\$)'*
%'-R<'<#<)'*(%'. ; ,D*(%*>+&E*)*)=c#&)&*+*A&+>%'''+&%%'*)6="+' '+'*%' '#'+*%*
)A&%'' (#K)@%E* Wg?)" (&)'%I)&)' '*-)*6* XYZh[*Wi#E)*%* 8#C&)* XYZj [*2Af'*)*
#(%''-#>#<)LM+*(+'*)6="+'* A&+A%' '+'*)* &%A&+\$)&%*%) (#&*A+&. ; ,D*A&+A\U%'*)*
=-#6#K)LM+*(%*. %-(+6+@#)'*2-\$)'*%E*=E*)EC#%''-%<+E* &%<+E%'')LM+*(%*
E)-%&#)'* '<+EA6%E%' '-)&%*A)&)*%6#=-&)'D*<+E+>+&E)*(%*E+-\$TU6+'*) '<+''-#')=&D*
A&+E+\$%'(+*)*)A&%'' (#K)@%E* %''-&%* '+'<+6@#)'* %D* <+''%H=%''-%E%' '-%D*
E%6?+&)'(+*+*(%*EA6%'?'<+<)(SE#<+B*P)&)*g="?)%*8#C&)*WXYZh[*%*2' (&)(%*-
)6*WXYZ[*D*' '%*A&+<%''+'A+(%<+''-&#C=#&A)&)*)*A&%'' (#K)@%E* '<+6)C+&)-#&)'D'*)*
E#-#@)LM+*(%&A&+\$)LM+*%*%)'M+*%*A+-%''<#>#<)6#K)&)*A%&E)'S'<#>B*

* 1%' '%* <%''T&#+D* %''%*)&-#@+*)A&%''%''-)*=E* 87*H=%*#''-%@&)*)*%'-&)-R@#)*
A%()@f@#<)*()'*. %-(+6+@#)'*2-\$)'*Q' '-R<'<#<)'*(%'. ; ,D*<+E*+*#''-=-#+'*(%)=c#&)&*
+*A&+<%''+'*(%*%'' '#'+*%)A&%'' (#K)@%E* (%*A&+>%'''+&%%'*E#-#@)&)*A+' '#C##() (%*(%*
&%A&+\$)LM+*%*%)'M+*(+'*)6="+'B*P)&)*\$)6#()LM+D*>+*#&%)6#K) (+*=E*%' '-(+* (%<)' +*
%E*=E)* (#<#A6#)'*+>%&-) (%*E*,); %*%)\$)6#)LM+*(%*(%*EA6%'?'<+<)' '+'*)6="+'B*

* , '-%*)&-#@+*%' -T*+&@)'#K) (+*%E* h*' '%L\%'B*2*8%LM+*X* (%'-)<)*'-&)C)6?+'*
&%6)<#+'') (+'*)+*-%E)* (%*A%'H=#')B*2*8%LM+*d*)A&%''%''-)*=E* 87*H=%*#''-%@&)*
. %-(+6+@#)'*2-\$)'*%'-R<'<#<)'*(%'. ; ,B*2*8%LM+*k*)A&%''%''-)*=E*, '-=(+* (%g)' +B*
2*8%LM+*^* (%'-)<)*+* '%&'=6-)(+'%*(#<=' '\%'*+C-#(+*''+'%'-=(+B*P+&*>#E)D*)8%LM+*
h*<+''-%EA6)*' '<+''#(%&)L\%'>#')#'%*'= @%' -\%'* (%'-&)C)6?+'*>=-&+'B*

-"! . &/O/12' 3,451/67' \$/(' 3,

, '-)*%LM+*)A&%''%''-)*'-&)C)6?+'*H=%*)C+&()E*)*=-#6#K)LM+*(%*87D*. %-(+6+@#)'*
2-\$)'*%*. ; , '+'<+''-%C+*(%<=&'+'*(%, (=)<)LM+*)*; #'-N'<#>#<)'#''-%*(+%'-=(+D*

\$%&#<+=U' %)*A+' '#C#6#() (%*(%*%CA)''M+''+='+*(%-<"+6+@#)'*%*ER-+(+'''%'')*
T&%)B*

* 8#6\$)*%*-)6B*WXYXZ[*%*P%&#&)*e="#+&*%*-)6B*WXYXd[*]A&%''%-)E*' #'-%E)'*(%*
&%<+E%"()L\%'*(%*:CJ%-+'*(%*2A&%''(#K)@%'''*0:24B*2E)&6*%-)6B*WXYXZ[*%*g+'-)*
%-)6B*WXYXd[*]=@%&%E*%'&)-R@#)'*A%()@f@#<)'*(%*)A&%''(#K)@%'''B*2<+ '-)*%*-)6B*
WXYZ`[*](%*' '\$+6\$%&)*E*=E*' #'-%E)*H=%''=@%&%*E)-%&#) #'<+EA6%E%'')&%*')A)&-#&*
(%*)-#&\$()(%*'A&+A+'-)'*A%6+ A&+>' '+&B*8)''<?%'*%*-)6B*WXYXd[*]&%<+E%"()E*
%C%&<0<#+*'&%'+6\$#(+*'A&+&+&-&+'*='T&#+*'<+E*?)C#6#() (%*' '%E%6?)''-%'B*

* ,E*' '%&)-)'(+*(%*. ; ,D*3)E)() %*%-)6B*WXYXX[*%*8?]>#H*%*-)6B*WXYXX[*
<+'''-&+%E*=E*E+(%6+*(%*A&%\$#M+*(%*(%*%EA%'?'+'(+)*6='+'=')'(+*() (+*')<)
(SE#<+'D*A&)*#''(#<)&+*'<=<' '+&=#''<=<' '+&)'<+<'<6='M+*(+<=&' +B*', '-&%*)' *
-R<'#<)'*H=%*E)#'' '%*(%'-)<)&E*%' -M+<6)' '#<)<LM+*%*A&%(#LM+D*=-#6#K)() '*A)&)*
)"T6#*%*(+<+EA&-)E%"-+*%*(%*%EA%'?' +D* <+E+*' '+&-&C)6?+'*(%*I%6(E)"U
.)@@+&*%*-)6B*WXYXX[D*a=%#&+@)*%*-)6B*WXYXX[*%*m)?%*(%*-)6B*WXYXd[B*,E*&%6)LM+)*
)6@+&-E+'D*7)''(+E*/+&%'-D* i +@#'-#<*7%&%' '#+''*% ; %<#'+''*3&%%'M+*=-#6#K)(+'*
A)&)*A&%(#LM+*%*(%<LM+*(%*&'<+'*(%*&A&+\$)LM+*%*%)'M+''+'&-&C)6?+'*(%*
2(")' '*%*-)6B*WXYXX[*%*8?]>#H*%*-)6B*WXYXX[B*a=)''-+*)'+&-&C=-+'*(%*A%'H=#')D*
3+E)' '\$#<*%*-)6B*WXYXY[*%*3)E)() %*%-)6B*WXYXX[*%*#%'\$' -#@)E+*'() (+*(%E+@&T>#<+'D*
<+EA&-)E%"-)'D*#''-%&)L\%' '*%*(%*%EA%'?'+'(+*)6='+'+'')'*(#<#A6#')'B*

* a=)''-+*)'*. %-(+6+@#)'*2-#&)'D* i#E)*%*8#%C&)*WXYZj [*=-#6#K)&E*A)&)*
E#-#@)&)*A+' '#C#6#() (%*(%*%)'M+*%*E%6?+&)&)*A&E)"S'<#)*''+'<=&'+'*
+>%&%<#(+*' %E*,);B*:6#&%&)*%*-)6B*WXYZ`[*A&+A\%E*)=-#6#K)LM+*'')*(#<#A6#')*(%*
A&+@&E)LM+*E%(#)'-%*=-#6#K)LM+*(+Pg+(@@D*=E)*#''-%&>)<%*G%C*#''-%&@)()*)+*
. ++ (6%*H=%\$#')&%<+''?%<%&<6)' '%*(%*A&#*'(%)%'<=<)'-%'*)=C#6#)&+*(+<%'-%*
''%'')*#(%)'-#<)<LM+B* eT*.)&#''?+*%*I&%)'(%*'WXYXd[*A&+A\%E*)C+&()@%E'D*
(%'+E#')() *2<-#&%P6)'D*H=%*+CJ%-#&)*#(%)'-#<)&A&#&'<+@''#-#&+'*%*#''-%&<#+')#*
(%*'<=<)'-%' %E*=E)*-=&E)*%D*<+E*C)' %''%6%'D*>+&E)&@&=A+'*?%-&+@S''%+'B*

* 2*A)&-#&*(%*' '%*%'-=(+'D*'M+>+&)*E*%'<+&-&)(+'&-&C)6?+'*H=%*=-#6#K)E*
. %-(+6+@#)'*2-#&)'*#''-%&@)() '*Q*' -R<'#<)'*(%*. ; , %E*=E*87B*;#)'-%*(#'+*%*
<+E*)*>#')6#() (%*(%*)=C#6#)&+*A&+>' '+&*%*+*)6='+'+'+A&+<' '+&*(%*' '%*#'+*%*
)A&%''(#K)@%E'D*>+*#*(%*' '\$+6\$#(+*=E*87* <+E*%'')*%*'&-&R@#)'A%()@f@#<)*%*
>="<#+')6#() (%*(%*#(%)'-#<)<LM+B*2Af'D*)A6#<)(+*)*=E* <=&' +&+>%&-)(+*'')*
E+()6#() (%*,);D*<+E+*%-&)-#&)*(%*E#-#@)&)*&%A&+\$)LM+*%*<+''%H=%''-%*%)'M+B*

8"!973%5: /,(5,456':5\$(/*+' ;,<'&'=94,

])'%) (+'')' '+A&-="#<() (%*' '%*6)<=")'*#(%)'-#<)(+'''+'*)&-#@+'*%'<=<)(+'D*%'')*
'%LM+*)A&%''%-)*=E*87*H=%*#''-%&@)*. %-(+6+@#)'*2-#&)'*Q*' -R<'#<)'*(%*. ; ,B*
; %'+E#') (+*(%*n>+&+U87D*>+*#*(%*' '\$+6\$#(+*<+>+&E*%A)(&M+*)&H=#%-o"#<+*
. +(%6U5#%Gulg+'-&+66%&*0. 5g4#<+E*)*6#''@=)@%E*(%*A&+@&E)LM+*PF-?+'D*+'*

I&)E%G+&I'; J) "@+*%]++-8-8)A0*)' *] #C6#+-%<)' *ea=%&F%*]%)=-#>=68+)A0%*+*C)"<+
 (%* () (+ '* 8ai#-8; %*)<+&(+* <+E*)*&H=#%-=&*)A&%''%-)()''*)#&=#&)*Z0*)'
 >="<#+")6#()(%'*(+*n>+&+U87*\$+6-)(')'+*A&+>%'+&* <+EA&%%"(%E*'+\$%*-)A)'*
 '#"<#+")#K)(' '*%' %H=%"<#)#' 0*H=%*%' \$+6\$%E* . ; , 0*)' * . %-+(+6+@#)' *2-#)\$' '*%*)' *
 '=@%' -\%' *(%*E)-%&#)#' * <+EA6%E%' -)&%*'A)&*)*6%#-=&)0*

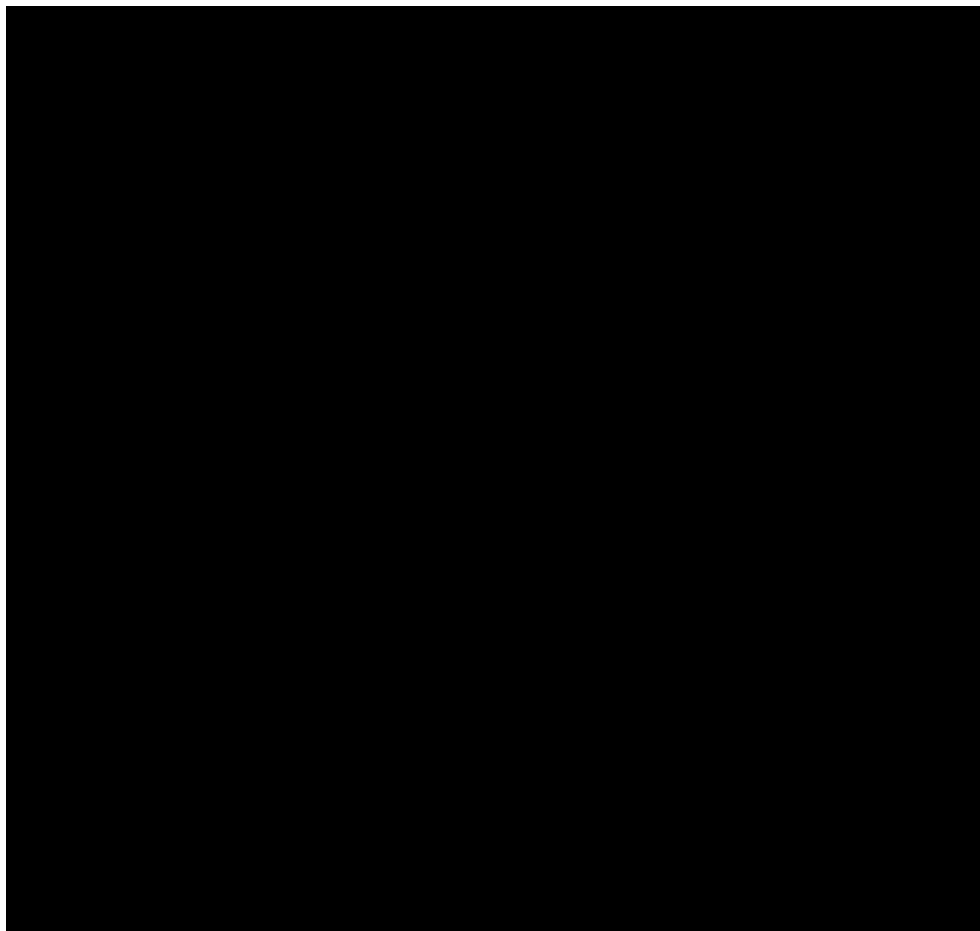


Figura 1. Arquitetura do modelo com Metodologias Ativas e técnicas de MDE

* 2*A&#E%#&)*>="<#+")6#()(%0* g=&' + %*'; #'<#A6#")0*<+''#'-%*'' +*<)(')-&)E%" -+*
 (+*A%&0+(+*6%-#\$+0*''+E%*(+*<=&' + %*#<#A6#")*E#''#'-&)()*'' +*2520*2*'%@="()0*
 g+ "%cM+0*R*\$+6-)(*)+*=A6+)(*(%*(+*#')&H=#\$+'*+C-#(+*')*A)&-#&*)(*)#''-%&)LM+*(+*
)6="+'* <+E* +*2520*'%"(+*=E* <+E* ()(+*' ()* -=&E*)''-%&#+&*A)&*)*)"T6#'%*%*
 -&%#'')E%" -+*(+*)6@+&#-E+0*%' +*+=-&+*)(*)-=&E*)-)=6*A)&*)*A&%(#LM+*%*-%' -%' 0*; %*
)EC)'*)' *-=&E)'*(%\$%E* <+''-%&+*')(+*' (%E+@&T>#<+'*0'%C+0*#)(%)0*' -)(+*<#6*
 %*#A+*(%*' <+6)'H=%* <=&' +*+%'' #' +*ER(#+40*#''-%&)L\%' 0)<%' '+'*)\$0(%+'*%*>f&="''4*
 %* (%' %EA%"?+'* 0'+-)'* ()* A&#E%#&)*)-#6#()(%*)\$)6#)-#\$)40* >&%H=%''-%E%' -%*
 =-#6#K)(+*'A)&)* . ; , *W_+' -+A+=6+'*%*-)*6*XYZb[*W3)E)(*)%-)*6*YXX[*W2(')'*%*-)*6*
 YXX[*%*%C-&)0(+*' (#&%-)E%' -%*(+*252+*=8#'-%E)*(%' /%' -M+*2<)(SE#<+*08/24B!

* 2* -%&<%#&)* >="<#+")6#()(%0* 7)"H=%)E%" -+0* %'' \$+6\$%*)*)A6#<)LM+* (+*
)6@+&#-E+* 7)"(+E* /+&%'-* W]&%#E)"* XYZ[*'+C+*' ()(+*' %''\$#)(+*' *)*%*-)A)*

* .)-%&#) #' *A)&) *6%#=#&*) A&% ' %' -) * + ' ' 6#'' / ' * (% *) & - # @ + ' * + = : 2 * ' % 6 % < # + ' ') (+ ' * A % 6 + * A & + > % ' ' + & * + = # ' ' (# <) (+ ' * < + E + * E) - % & #) #' * A % & ' + ' ') 6 # K) (+ ' D * A) &) * + % E C) ') E % ' - + * - % f & # < + s A & T - # < + * % * & % ' + b = L M + * () ' *) - # \$ # () (% ' B * 1 % ' -) * > = " < # + ' ') 6 # () (% D * R * A + ' ' 0 \$ % 6 * + *) b = " + *) \$) 6 #) & * + ' * E) - % & #) #' * # ' ' (# <) (+ ' * (% *) < + & (+ * < + E * + * @ &) = * (% * H =) 6 # () (% D * " = E) * % ' <) 6) * (% * Z *) * ^ * A + ' - + ' D * H = % * # ' ' (# <) E D * & % ' A % < - # \$) E % ' - % D * q E = # - + * & = # E r D * q & = # E r D * q # ' ' (# % & % " - % r D * q C + E r * % * q E = # - + * C + E r B * 2 *) \$) 6 #) L M + * % *) ' * A) 6) \$ &) ' U < ?) \$ % * (+ ' * E) - % & #) #' * # ' ' (# <) (+ ' * ' % M + *) & E) K % ' ') () ' * " + * C) ' < + * (% * () (+ ' D * < + ' ' - # = # ' ' (+ *) ' ' # E * = E) * C) ' % * (% * < + ' ' ? % < # E % ' - + D * H = % * ' % & \$ # T * A) &) * + > = " < # + ' ') E % ' - + * () * - R < " # <) * (% * & % < + E % ' ') L M + * q l # b - &) @ % E * g + b) C + &) - # \$) r B *

* 2 * > = " < # + ' ') 6 # () (% * : & # % ' -) L \ % ' * % c # C % *) - R * (+ # *) & H = # \$ + ' * <) () ' - &) (+ ' * A % 6 + * A & + > % ' ' + & * < + E * # ' ' - & = L \ % ' * A) &) * & % ' A + ' ' (% & *) * <) () * - # \$ # () (% * A & + A + ' -) D *) * ') C % & t * + ' * + C J % - # \$ + ' *) b <) " L) (+ ' D *) ' * % ' - &) - R @ #) ' * % ' -) C % 6 % < # () ' D *) * ' + b = L M + * % D * A + & * > # E D * + * % ' \$ # + * (% * = E * & % 6) - f & # + * < + E * + * " + E % * (+ ' * # ' - % @ &) " - % ' D * + * - 0 = b + * () * H = % ' - M + D *) * > = " () E % ' -) L M + * - % f & # <) D * + ' * + C J % - # \$ + ' D *) ' * % ' - &) - R @ #) ' D *) * ' + b = L M + * % *) ' * & % > % & S " < #) ' B * e T *) * 2 - # \$ # () (% * (+ ' *) b = " + *) A & % ' % ' -) *) ' * H = % ' - \ % ' * (% > # ' ' () ' * A % 6 + * A & + > % ' ' + & * A) &) * H = % * + ' * # ' - % @ &) " - % ' * (+ * @ & = A + * & % ' + b \$) E B *

* a =) " - + *) * > = " < # + ' ') 6 # () (% * U # ' - f & # < + * (% * A & % % " < ? # E % ' - + D *) A & % ' % ' -) * + ' * & % @ # ' - & + ' * (% *) < % ' ' + ' * % *) ' * & % ' A + ' -) ' * <) () ' - &) () ' * A + & * # ' ' - % @ &) " - % ' * (+ * @ & = A + B * 1 % ' ' % * ? # ' - f & # < + D *) (+ ' * < + E + * + * " + E % D *) -) * % * ? + &) * (% * A & % % " < ? # E % ' - + * ' M + * % C # (+ ' *) + ' *) b = " + ' * % * A & + > % ' ' + & % * * () * (# ' < # A 6 # ' ') B * / % % (C) < / * A % & E # - % *) + *) b = " + * \$ # ' =) 6 # K) & * + ' * < + E % ' - T & # + ' * % * + & # % ' -) L \ % ' * (+ * A & + > % ' ' + & D * C % E * < + E + * " + -) ' * % * = E *) & H = # \$ + *) * <) () * - # \$ # () (% * A & + A + ' -) * A) &) *) * & % ' + b = L M + D * < = E A & # ' ' (+ U * % *) ' ' # E * + * A) A % 6 * () ' * . % - + (+ b + @ #) ' * 2 - # \$) ' B * P + & * > # E D *) * > = " < # + ' ') 6 # () (% * .) - % & #) #' * C % E *) \$) 6 #) (+ *) A & % ' % ' -) *) + ' *) b = " + ' * + * 6 # ' ' / * (% *) < % ' ' + * (+ * d * E % 6 ? + & % ' * E) - % & #) #' * < b) ' ' # > # <) (+ ' * % *) ' ' + < #) (+ ' * Q ' * A) 6) \$ &) ' U < ?) \$ % * <) () ' - &) () ' * A % 6 + * A & + > % ' ' + & D * A & + < % (% ' - % ' * () *) \$) 6 #) L M + * & %) 6 # K) () * A % 6 + * A & f A & # + ' *) b = " + ' * % *) (\$ # ' (+ ' *) () * C) ' % * (% * < + ' ' ? % < # E % ' - + D * < + ' ' > + & E % * > = " < # + ' ') E % ' - + * () * - R < " # <) * (% * & % < + E % ' ') L M + * q l # b - &) @ % E * g + b) C + &) - # \$) r B *

> " ! ? 3 %) (' , (5 , 6 / 3 ' ,

: % ' - = (+ * (% *) ' + * > + # % & %) 6 # K) (+ * ' ') * (# ' < # A 6 # ' ') * q , (= <) L M + * % i # - % &) - = &) * A) &) * g & #) " L) ' r D * (+ * < = & ' + * (% * q i # < % " < #) - = &) * % E * P % () @ + @ #) r D * " + * A % & 0 + (+ * 6 % - # \$ + * q X Y X X s X r D * + > % & -) (+ * A) &) * ^ b *) b = " + ' * (% * ^ * A + b + ' * (# % & % " - % ' D *) * E + () 6 # () (% * ,) ; B * 1 + E % ' * % % U E) # 6 ' > + &) E *) C & % \$ #) (+ ' s) " + " # E # K) (+ ' * A) &) * " M + * # (% " - # > # < T U 6 + ' D * < + " > + & E % * + & # % ' -) L M + * (+ * g + E # - S * (% * n - # <) * () * = " # \$ % & ' # () (% D * H = % * (% ' -) <) * ' ') * & % ' + b = L M + * # ' ' - % & ' ') * H = % * q " M + * ' % & M + * & % @ # ' - &) () ' * % " % E *) \$) 6 #) () ' t * 0 # 4 * A % ' H = # ') ' * (% * + A # ' ' # M + * A V C 6 # <) * < + E * A) & - # < # A) " - % ' * " M + * # (% " - # > # <) (+ ' v * % 0 # 4 * A % ' H = # ') ' * < + E * C) " < + ' * (% * () (+ ' D * < = J) ' * # ' > + & E) L \ % ' * ' M + *) @ & % @) () ' D * ' % E * A + ' ' # C # 6 # () (% * (% * # (% " - # > # <) L M + * # ' ' (# \$ # (=) 6 r B * P + & -) " - + D * - + (+ ' * + ' * < = # () (+ ' * R - # < + ' * > + &) E * - + E) (+ ' * A) &) *) * & %) 6 # K) L M + * (% ' - % * - &) C) 6 ? + B *

* : '*() (+ '*()*('#<#A6#')*>+&)E*<)(' -&)(+ '*)*A&#E%#&)*%(-)A)*(%*=-#6#K)LM+
(+* n>+&+U87B* eT* ")* '%@=")(* %-)A)D*)* A&+>% ' +&)* %"\$#+=* A)&)*)*)"T6#* %* %*
-&%#")E%" -+*(+*)b@+&#-E+* 7)"(+E*/+&%' -*=E*)&H=#\$+* <+E*()(+ '*()*('#<#A6#')*
qg+EA=-)(+&""), (= <)LM+rD*H=%* <+ " -%EA6+=*d*)-#\$() (%'*)\$)6#)-#\$()'%*E*#*#'-&)(*
A%6)*E%'E)*A&+>% ' +&)*" +* <=&' +*(%*qi#<% " <#)-=&)*E*P%()@+@#)rD* " +* '%E%' -&%
YXXsZ*)*bb*)6=" + 'B*

* 1)* %-)A)*(%* 7)"H=%)E%" -+D* (+ '* `b*)6=" + ' * E)-&#<=6) (+ 'D* j k* >+&)E*
<6)' '#<)(+ '* '%E*6#<+*%*Z^* <6)' '#<)(+ '* <+E*6#<+D* <+ " >+&E*)"T6#* %*%A&%(#LM+
(+*)b@+&#-E+* 7)"(+E*/+&%' -B*1)*H=)&-)*%(-)A)D*)* A&+>% ' +&)* +A-+=*A%6)*%'-&)-R@#)*
A%()@f@#<)*(')'. %-+ (+b+@#)*'2-#\$()'2]P*%*+*H=)" -#)-#\$+*(%*^*#* '%@&)" -% '*A)&)*
)>+&E)LM+*(%*@&=A+ 'D* '%* (+*H=%D*")*%(-)A)* '%@=#* '-%D*>+&)E*>+&E) (+ 'Zj *@&=A+ 'D*
'%" (+* k* <+E* h* #* '-%@&)" -% '* %* Zd* <+E* ^* #* '-%@&)" -% '* B* 1)* '%C-)*%(-)A)D* >+&)E*
'% <+6?#(+ '* A%6)* A&+>% ' +&)* + ' * A+&-)#* . %66+D* /++@6%* 8<?+6)6#* 8<#%6+D* P+&-)6*
; +E0*#*PVC6#<+D*, (=g)A%*%*P6+, (=D*A)&)*)*C=' <)*(%*E)-%&#)#* <+EA6%E%" -)&% '*
A)&)*)*6#=-&)* (+ '*)6=" + 'B* eT*")* 'R-E)*%(-)A)D*)* 'A)6\$&)'* <)(' -&)(' * >+&)E*
q6#-%&)-=&)*#* >)" -#rD*q@S* "%&+*6#-%&T&#+r*%*q%(= <)LM+*%*6#-%&)-=&)rD*H=%*)C+& ()\$)E*+ '*
)' '= " -+ '*&6)<#+")(+ '*)*('#<#A6#')*>+&-) ()B*

* 1)* +#-)\$)*%(-)A)*(+*n>+&+U87B*)*A&+>% ' +&)* <)(' -&+=* =E*)-#\$() (%'*)'%&*
&%)6#K) ()A%6+ '*@&=A+ 'B*2*H=%* '-M+%* '\$+6\$%*=)*%6)C+&)LM+*(%*=E*A&+J%-+*(%*%' ' #' +*
' +C&%* +* -%E)* <+ " -+ '* (%*>) ()D* (#&%<#+") (+ *)+*, "'#* +* l=")E%" -)6* 9B* g+EA+*
&% 'A+ ' -)'D* + ' *)6=" + 'D* %E* '%=* &% 'A%<#\$(+* @&=A+ 'D* (%\$%&#)E* A&%%" <?%6* +*
+CJ%-#\$+ 'D* '%-&)-R@#)*' (%*%' ' #' +* %* +* &% '=6-) (+ '*)6<)"L) (+ '*)*%6)C+&)LM+B*P+&*
>#E0*")*""+)*%(-)A)D*>+&)E*%" <+ " -&)(+ '*Z^*E)-%&#)#* <+EA6%E%" -)&% 'D* '%* (+*ZY*
(+* /++@6%*8<?+6)6#*^* (+*, (=g)A%*D*+ (+ '*#* (#<) (+ '* <+E+* 8#E*A%6)*A&+>% ' +&)*
A)&)*)*%C#C#LM+B*

* 2Af* '*A&%%" <?#E%" -+&%)6#K) (+*A%6)*A&+>% ' +&)D*+ '*)6=" + ' *-#\$%&)E*)<% ' +*
)*('#<#A6#')*>+&-) ()" +*n>+&+U87B*2*I#&=&)*X*)A&% '%* -)*) '%&% 'A+ ' -)'(+ '*@&=A+*ZZD*
<+EA+ ' -+*A+&^*#* '-%@&)" -% '*D*")*)-#\$() (%*A&+A+ ' -)*A%6)*A&+>% ' +&)B* : C' %&\$)U' %*
H=%* + '*@&=A+ '* (%\$%E*#* '%&#&+* +*CJ%-#\$+ 'D* '%-&)-R@#)*' %*)*'+6=LM+*A)&)*)*H=%* '-M+B*
P+&* >#E0*#* <6=#&* =E*)&H=#\$+* <+E*(-)6?%' (+* (%*%' '\$+6\$#E%" -+*()*)-#\$() (%B* 1+*
H=%* -)'@%*)* A+ ' '#C#6#) (%* ()* A&+>% ' +&)* >)K&%* A+ " (%&)L\%' *)&% 'A%#-+* ()' *
&% 'A+ ' -)'%'\$#) ()' *A%6+ '*@&=A+ '* (%*)6=" + 'D*)* l#&=&)*d*)A&% '%* -)* +* <+E%" -T&#+*
'% <6#-+*")*)-#\$() (%* (+*@&=A+*ZZD*H=%*\$#*)*% ' <6)&%<%&%* '=@%&#&*E+ (#<)L\%' *")*
&% 'A+ ' -)'D* +* H=%* <%&-#<)*)-&)\$R* ('%* '%>% (C) <I* +* <+ " <#%-+* %*)*A&T-#<)* ()' *
. %-+ (+b+@#)*'2-#\$()B* , "-&%* +*C%" %>0<#* +* +C' %&\$) (+ '*A%6)*A&+>% ' +&)D* " -+*=U' %*
=E*@)" ?+*(%*-%EA+*")*C=' <)*(%*E)-%&#)#* <+EA6%E%" -)&% '*H=%*)C+& ()' %E*+*
)' '= " -+*()*('#<#A6#')v*)*%6)C+&)LM+*(%*@&=A+ '*?%-&+@S* "%+ '*H=%*#* '<% " -#\$)E*)*
)A&% " (#K)@%E* <+6)C+&)-#\$() %* '%-&%* +* #* '-%@&)" -% '*v*)* =-#6#K)LM+*(%* . %-+ (+b+@#)' *
2-#\$()D* '%A%<#<)E%" -%*)*2]PD*H=%*)C+& ()H=%* '-\%' %*s+=* A&+C6%E)'*)* '%&%E*
&% ' +6\$#(+ '*A%6+ '*)6=" + 'B*

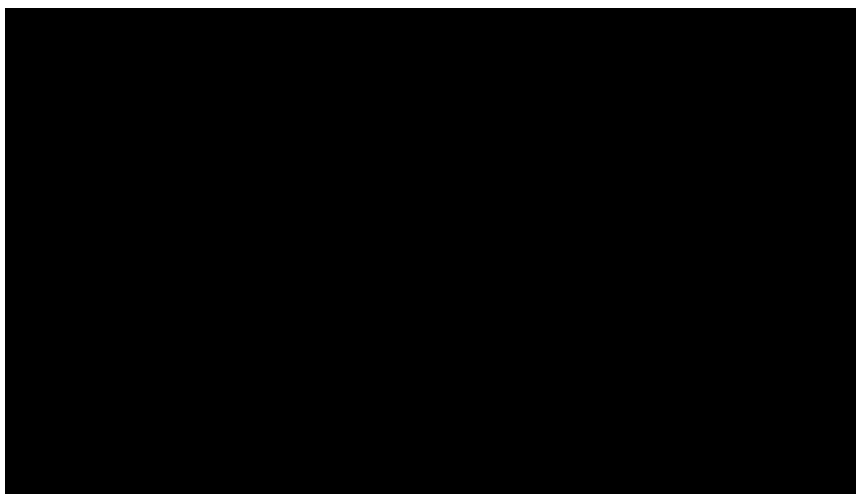


Figura 2. Preenchimento das respostas na atividade proposta pela professora

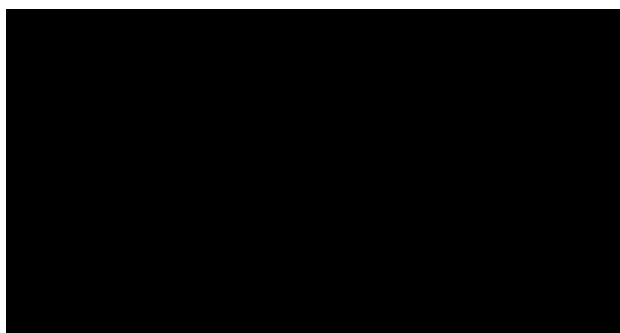


Figura 3. Apresentação do feedback da professora na atividade dos alunos

* , E*'%'&)-)" (+U'%' (+ '*C%' '%>0<#+'*) + '*')6=" + 'D'>+E%" -+=*)*)A&%" (#K)@%E*
 <+6)C+&)-#\$(D'A)&-#<#A)-#\$(*)%*#" -%&)-#\$(D'<+'>+&E%*JT*('%'-)<)(+''')*6#-%&)-=&)*A+&*i#
 %-%*)6B*WXYZ`[*%*2<+'-)*%-%*)6B*WXYZ`[D')6RE*('%<+'-&#C=#&*<+E*)A&#E+&)E%" -+*(+ '*
 <+'<%#-+'*)A&%'%"-)(+ '* ")* (#'<#A6#'"*) <+E*)* #'(#<)LM+* (%* E)-%&#) #'*
 <+EA6%E%"-)&%*B* ; %'-%* E+(+D')* =-#6#K)LM+* (%* -R<"#<)'* <+EA=-)<#+")#* (%*
 #'-%6#S"<#))&-#>#<#)6* A)&)* #(%"-#>#<)&*)6=" + '* A&+A%"'+ '* Q* &%-%"LM+* %* A+' '0\$%6*
 %\$)'M+D'<+E+* . ; ,D'J=" -)E%"-%*<+E*) '*%'&)-R@#)'*A%()@f@#<)'*'+<)()'***+*= ' +*
 ()'*. %-+(+6+@#)'*2-#\$(D'A&+A\%*=E*)6-%&')-#\$(*)A&%" (#K)@%E*<+6)C+&)-#\$(*)
 %*#"-%&)-#\$(D'H=%*%' -#E=6)*)*(#<='M+*(%#(%#)'*%'&)+ '*#'"-%@&)"-%*' (+ '*@&=A+' B*
 2*A)&-#&*(%'') +>%&-)D'>+*#A+' '0\$%6*\$%&#>#<)&*+*(%'%EA%"?+*)*-=&E)B!

@"! 453)1%/(' 3,5,A736)33B53,

: '*&%'=6-)(+ '*')A&%'%"-)(+ '*"'%' -)'*%LM+* &%>%&E U'%'Q*)\$)6#)LM+* (%* (%' %EA%"?+*
 ()*-=&E)D'<+E*C)'%''')<+EA)&)LM+*()'***'+-)'*+C-#()' '*A%6+'*)6=" + '*''')*'-#\$()(%' *
)\$)6#)-#\$()'*()'*(#<#A6#'")'q, (= <)LM+*%*%i#-%&)-=&)*A)&)*g&#"L)'r%*qg+EA=-)(+&*
 ")*, (= <)LM+*B* 2* A&#E%#&)* &%>%&U' %*)+* A%&0+(+* 6%-#\$(+* XYXXsXD' E#'"#'-&)()' *`b*
)6=" + '*H=%*>#K%&)E*=' +* (+*n>+&+U87*(=&)"-%*+ '* %E%' -&%v*JT*) '*%@=" ()*A%&-%"<%*
)+*A%&0+(+*XYXXsZD'%"\$+6\$%" (+*bb*)6=" + '*H=%*"'M+*=-#6#K)&)EB*

* 1%''%* A&+<%''+D* C='<+=U'%<+EA)&)*+H=)'-#)-#\$(%*)6="+'*
 E)-&#<=6)(+'D*)A&+\$)(+'D*%A&+\$)(+'%*)'''-+)*+C-#()*<+E+*ER(#)*()-=&E)B*26RE*
 (#'+'D*)*H=)'-#()*(%* (%*)6="+'*H=%*=-#6#K)&)*+n>+&+U87*%*)'*=)'*#''-%&)\L%'*
 -)ECRE*>+&)*E*<+''#(%&*)(+'*'+A&+<%''+B*8)C%U'%*H=%*)<+EA)&)*LM+*)A&%''%''-)*
 >@#6#()*(%'D*JT*H=%* 'M+* (#'<#A6#''')*(#'-#''-)'*<+E* (#'NE#<)'* (%*)\$)6#)\L%'*
 (#>%&''-%'D*%EC+&)*+>%&-)(+'*A)&)*)*E%'E)*-=&E)*%*A%6)*E%'E)*A&+>%''+&)*B*
 2#''()*' #ED*<+''#(%&)*U'%*&%6\$)''-%*)*&)*6#K)LM+* (%'')*)\$)6#)LM+D*=E)*\$%K*H=%*
 A%&E#-%*)>%&#&*<+EA)&)\L%'*%''-%*'+*%&'=6-)(+'*+C-#(+*'%*%\$&#<#&)*'%*'+*87*
 <+''-&#C=#*A)&)*)*A&%''(#K)@E%B*1%''%*'%''-#(+D*-)#*()*(+*'+A+(%E*'%'&*<+EA6%E%'')
 (+*'+E*+*'%A+#E%''-+*'%*#''>+&E)\L%'*<+''-#(''')*'%LM+*)''-%&#+&B*
 * 2* I#@=&)*k*)A&%''%''-)*)*H=)'-#()*(%* (%* E)-&#<=6)(+'D*)A&+\$)(+'* %*
 &%A&+\$)(+'''')*(#<#A6#''')*q, (= <)LM+*%*i#-%&)-=&)*A)&)*g&#''L)'r*>+*#(%*j kv''')*(#<#A6#''')*qg+EA=-)(+&*
 ')*, (= <)LM+rB*1+-)U'%*H=%*''*)A&#E%#&)*(#<#A6#''')*+*+>+>)*6* (%*E)-&#<=6)(+'*>+*#(%*
 `b*)6="+'D*E*H=%*j Z*>+&)*E*)A&+\$)(+'*%*Z*%&%A&+\$)(+'B*eT*)''%@="()*(#<#A6#''')*
 <+''-+=<+E*bb*E)-&#<=6)(+'D*%'*(+`Z*)A&+\$)(+'*%*Z*%&%A&+\$)(+'B*, E*-%&E+'*
 A%&<%''-)=)#'D''')*A&#E%#&)*(#<#A6#''')D*j bDj`p*(+'*)6="+'*>+&)*E*)A&+\$)(+'*%*XYDXp*
 &%A&+\$)(+'v''')*'%@="()*D*`ZD`Xp*>+&)*E*)A&+\$)(+'*%*Z*`DZ`p*&%A&+\$)(+'B*

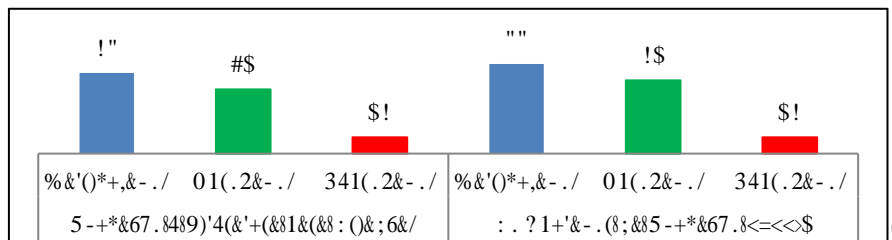


Figura 4. Índice de matriculados, aprovados e reprovados nas duas disciplinas

* 2* %&'A%#-+*()*ER(#)*()-=&E)D*)'''+)*+C-#()*''')*(#<#A6#''')*q, (= <)LM+*%*
 i#-%&)-=&)*A)&)*g&#''L)'r*>+*#(%*j kv''')*(#<#A6#''')*qg+EA=-)(+&*
 j Dh`B*; %*)<+&(+<+E*)I#@=&)*^D*)'ER(#)'* (%*)EC)'*')'-=&E)'*>+&)*E*A&f#c#E)'B*

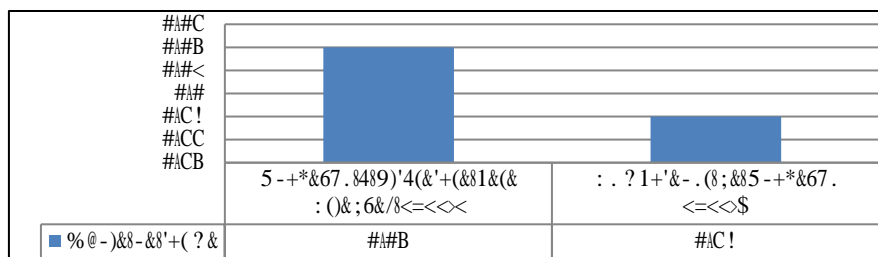


Figura 5. Média da turma nas duas disciplinas

* ; #)''-%*(+'''VE%&+*')A&%''%''-)(+'D*R*A+'0\$%6*\$%&#<)&*H=%*)*ER(#)*()
 -=&E)*H=%*=-#6#K+=*+n>+&+U87*R*6#@%&#)E%'-%*E)#+&*0jDjk*c*jDh`4D`%EC+&)*+*
 ''VE%&+*(%)6="+'*%&A&+\$)(+'*%j)*#@=)6'0Z`c*Z`4*%*(%)A&+\$)(+'*%j)*E%''+&*0jZ*
 c*`Z4*%E*%&6)LM+*)+*')6="+'*H=%*''M+*=-#6#K)&)*E*B*, ''-%&-)-+D*%&'')6-)U'%*)
 #EA+&-N'<#)*(%''M+*<+''#(%&)&)*A%''')'+*%)6+&*(*)''+>+>)*<+EA)&)*LM+D*=E)*\$%K*
 H=%*''%&-)*(%*(#<#A6#''')*'+>+E*(#''NE#<)'*(#>%&''-%'B*2''#ED*+&')U'%*&%6\$)''-%*

(%'-)<)&* H=%D* "'*(#<#A6#"'')<+EA)&()('D*=E)*('*)\$)6#)L\%'&%)6#K()('*)<+''-%<%=*A&%''%<#)6E%'-%*''+*A+6+*('*<=&'+D*<+''#(%&)'(+*H=%*')6*+ALM+*R* (%-%&E#"'')-%*A)&)*#''>6=%''<#)&*)*ER(#)*>#''6*, "H=)"-+*"'*(#<#A6#"'')*qg+EA=-)(+&* "'*) , (= <) LM+r* >+*# &%)6#K) (+* =E*' %E#''T&#+* %E* @&=A+* <+E+*)-\$#() (%*)\$)6#)-\$#)* A&%''%<#)6D*"'')*(#<#A6#"'')*q, (= <) LM+* %i#-%&)-=&)*A)&)*g&#)'L)'r* >+*# &%)6#K) ('*)=E)* A&+)\$)* %'<#&-)* A&%''%<#)6D* 3+()\$)D* "M+* '%* A&+<=&)* (#<=-#&* H=)6* ER-(+* R* <+''#(%&)(+*E)'#>T<#6*+* (#>0<#6*A)&)* %*)-#''@#&)* '%E%6?+&%'''+-)'*%D*'#D*&%>6%-#&* H=%D*)+* '%%C#@#&*H=%*+*')6="+'*%'-%J)E*A&%''%<#)6E%'-%*A)&)*')\$)6#)LM+D*A+(%U '%<+EA&E-%&)*')=)*A)&-#<#A)LM+D*'%=(%'%EA%''?+*%*+*''0\$%6'(%*)C'-%'LM+D*JT* H=%* '%&H=%&*+* ('%6+<)E%'-%* (%6%'')+*E="<0A#+* (%*+>%&-)* (+*<=&'+D*E=#-)'* \$%K%''(#'-)'-%*(+*'%=*6+<)6'(%*+&@E%B*

* ; %''')>+&E)D*+=-&+*'>)-+&%D*<+E+*)*A)&-#<#A)LM+*+''U6#''%D*=-#6#K)LM+* %* #''-%&)LM+*''M+*%&%6\$)'-%*A)&)*#''(#<)&+*H=)"-+*A+*(%<+''-&#C=#&*A)&)*+*A&+<%''+* (%*%''#''+*%*)A&%''(#K)@%E%B*P+&-)'-+D*)+* %*)''6#')&)*H=)"-#() (%* (%*)6="+'*H=%* =-#6#K)&E*+*87D*+C'%&\$)U'%*''VE%&+*'%cA&%''#B*2*I#@=&)*h*)A&%''%'-)*H=%*jj*)6="+'*=-#6#K)&E*A%6+E%"+'*=E)*\$%K*+87D*^hD^Zp*(+*E)-&#<=6)(+*4D%'H=)"-+* ZX*''M+*=-#6#K)&E*''%''?=E)*\$%K*0ZDdkbp4B*

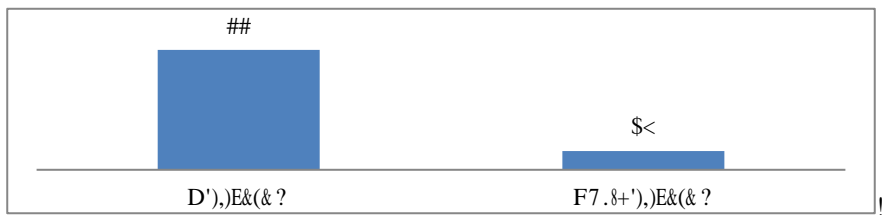


Figura 6. Quantitativo de alunos que utilizaram o Fórum-SR na disciplina

* 2+*' %*)''6#')&+*'() (+*'(%*#''-%&)L\%'(+*jj*)6="+'*H=%*=-#6#K)&E*+*n>+&+U 87*%E*')=)'*(\$%&'')>="<#+'')6#() (%*D*+C'%&\$)U'%*H=%*+*''VE%&+*'\$)&#)E*(%Z*)*b* #''-%&)L\%'D*)'#E*+<+*R*)A&%''%'-)(+*''*I#@=&)*jB*: ''() (+*'#''(#<)&E*H=%*dj* %'=-()''-%*#''-%&)@#&)E*Z*\$%K*<+E*+87D*Z`*#''-%&)@#&)E*X*\$%K%'D*^*#''-%&)@#&)E*d* \$%K%'D*`*#''-%&)@#&)E*k*\$%K%'D*d*#''-%&)@#&)E*^*\$%K%'D*X*#''-%&)@#&)E*h*\$%K%'D*d* #''-%&)@#&)E*j*\$%K%'D*A+&*#E'D*Z*)6="+'*#''-%&)@#&=b*\$%K%'B*

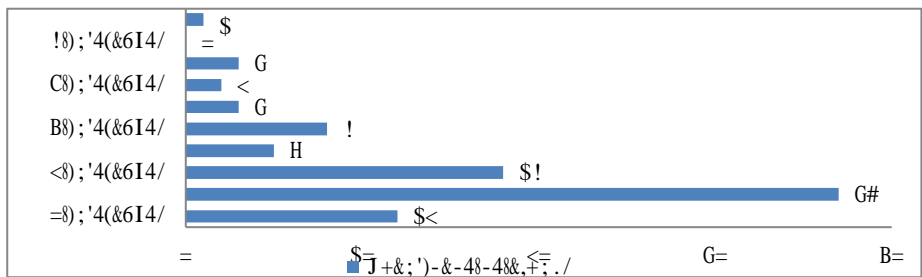


Figura 7. Quantitativo de interações dos alunos no Fórum-SR

* g+E*)*>#''6#() (%* (%* <+''-&#C=#&* <+E+*)*)"T6#'%* (+*'() (+*')A&%''%'-)(+*' "%''')* '%LM+D*=E* H=%' -#+'T&#+* C)'%) (+* ''+* <#-R&#+*' (+* . +(%6+* 32. *w* 3%<?' +6+@F*2<<%A-)'<%*. +(%6 0.)&)"@="R* %* /&)"#RD* XYZk4* >+*#')A6#<)(+*')+'*

)6="+'A)&*)*)\$)6#)LM+*(*)<%#-)LM+6*: '*(+('@%&#')*(*)\$)6#)LM+*(*)<%#-)LM+
 C)'%)(+''')*=-#6#()(%*%=')C#6#()(%*(+*87*A6+*'*)6="+'>+&)E*A=C6#<)(+''''+*)&-#@+*
 (%* 2"(&)(%*%-*)66* WXYXd[D*)A&%%'")-(+*' '+ xxx95* 8#EAF'#+']&)'#6%#&+* (%*
 9">+&ET-#<)'')*, (=)LM+*08]9,*XYXd46*1+*%"")"-+D''%'-%*)&-#@+D*)6@=E)'&%%'A+'-)'*
 (+*'kZ*)6="+'+'%&M+*)A&%%'")-(+*'(%>+&E)*)*<+'-&#C=#&'')*"T6#%'%*E*H=%'-M+6*
 , 'A%<#>#<)E%"-%' +C&%*)*=-#6#K)LM+*%*#'"-%&)LM+*'''+n>+&+U87D*+'*&%'=6-)(+'*
 +C-#(+''')*)A6#<)LM+*(+*H=%'-#+'T&#+''''+. +(%6+*32. D*H=%'")6#)'*%*+*='+(+*
 n>+&+U87*#''-#@*)*A)&-#<A)&)*-\$)E%"-%*()*(#<#A6#')*0I#@=&)*4D'E)'*(*dX*)6="+'
 0j`p4* <+'<+&()&)E* <+E*)*)>#&E)LM+D*#'"(<#)"(+*H=%*+'*#'-%E)*+'*%'-#E=6)*)*
 A)&-#<A)&)*-\$)E%"-%D*%&=(K#"(+)*A&+C)C#6#()(%*(%*(%*'#'-#&6*: '*<+E%"-T&#+'*(+*'*)
)6="+'*2Zh*%*2dh*%\$#(%<#)E*%'%'&%'=6-)(+'6*

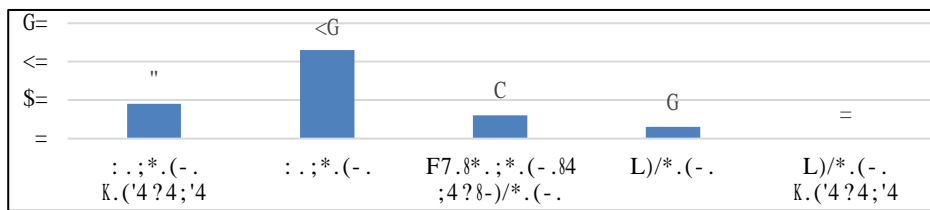


Figura 8. O uso do Fórum-SR instigou a participar ativamente da disciplina

!! "#\$%&'()*+,-(!),)*+./!+!-!/-.01.,2/!34+!56(57+89!
 !! "#\$%&';,)*+./!.4,*(!<(.!34+!,0)*,=!/!5+34,)/!+!+)*4-(!+!>!-+!/@2,A!4*,A,B/CD(89!

* 1)*E%'E)*6#"?)*E)'*(*d*)6="+'0bXp4* <+'<+&()&)E* <+E*)*)>#&E)LM+*
 (%*H=%*'%'%"-#)E*'')-#>%#-+'* <+E*)*'>="<#+"#6#()(%*'%'%'&\$#L+'*%C#'-%*'%' +
 n>+&+U87*A)&)*+A&+<%*' +*(%*%'-= (+0I#@=&)*b46*: '*<+E%"-T&#+'*(+*)6="+'*2Zh*%*
 2XZ*%&#-%&)E*+'*&%'=6-)(+'6*

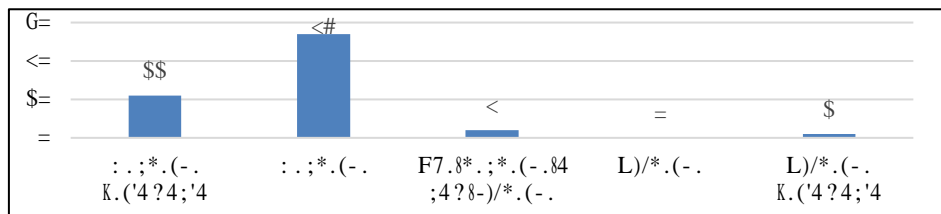


Figura 9. Eu me sinto satisfeito com o Fórum-SR para o processo de estudo

!! "#\$%&'()*+,-(!),)*+./9!E6(4F+!4./!<(!/-,01.,2/!5/6/!/!-,),2,5A,0/89!
 !! "#G#!&H*,./!IF5+6,J02,/89!

* 1M+*+C'-)"-%D*H="(+*H=%'-#+"(+*'%'&%<+E%"()&)E*+*n>+&+U87*A)&)*+*
 A&+<%*' +*(%*%'-= (+*%*)A&%'"(#K)@%E* 0I#@=&)*ZY4D'E)'*(*dh*)6="+'0`j p4*
 <+'<+&()&)E* <+E*)*)>#&E)LM+D*+*H=%*(%E+'''-&*)*'')<%#-)LM+*%*)*=-#6#()(%6*
 , ''%'&%'=6-)(+'*%\$#(%<#)E*H=%D*%EC&)**)"T6#%'*%J)*+&#="()*(%*(#<#A6#')*
 (#>%&#'-%D*)*=-#6#K)LM+*(+*n>+&+U87* A+(*% <+'-&#C=#&*A)&)*+* A&+<%*' +*(%*
)A&%'"(#K)@%E*(+*)6="+'6*

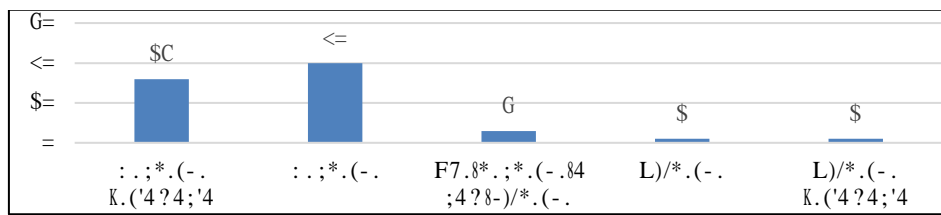


Figura 10. Eu recomendaria o uso do Éforo-SR para o processo de estudo

5) 6% * & % ' ') 6-) & H = % D* H =) " (+ *) A & + > % ' ' + &) * = - # 6 K + = * + n > + & + U 8 7 * ") * (# ' < # A 6 # ") * q , (= <) L M + * % * i # - % &) - = &) * A) &) * g & # ") L ' r D *) * > = " < # + ") 6 # () (% * 7) " H = %) E % " - + *) A & % ' % " - + = * = E) * 6 # ' -) * < + E * Z ^ *) 6 = " + ' * < 6) ' ' # > # <) (+ ' * q < + E * & # ' < + * (% & % A & + \$) L M + r * % * j k * q ' % E * & # ' < + * (% & % A & + \$) L M + r D * < + E * C) ' % * ") *) " T 6 # ' % * (% * A & % (# L M + * (+ *) 6 @ + & # - E + * 7) " (+ E * / + & % ' D * - & % # ") (+ * < + E * + ' * () (+ ' * () * (# ' < # A 6 # ") * q g + E A = -) (+ & * ") * , (= <) L M + r D * 2 + * > # ") 6 * () * + < + & & S " < #) * () * (# ' < # A 6 # ") D * (+ ' * Z ^ *) 6 = " + ' * # " (# <) (+ ' * < + E + * A & + A % " ' + ' *) * & % A & + \$) L M + D * X > + &) E *) A & + \$) (+ ' * % * + ' * + = - & + ' * Z d & % A & + \$) (+ ' B * 2 *) " T 6 # ' % * () ' * " + -) ' * % * # " - % &) L \ % ' * (+ ' * X *) 6 = " + ' *) A & + \$) (+ ' * & %) > # & E) E * H = % *) * = - # 6 K) L M + * (+ n > + & + U 8 7 * A + (% * < + * - & # C = # & * A) &) * + * A & + < % ' ' + * (% *) A & % " (# K) @ % E D * J T * H = % * A & + A \ % *) * # " - % &) L M + * % *) * < + 6) C + &) L M + * % " - & % * + ' * < + 6 % @) ' * ") * & % ' + 6 = L M + * () ' *) - # \$ # () (% ' D * C % E * < + E + * ") * 6 % # - = &) * (+ ' * E) - % & #) # ' * = @ % & # (+ ' D * >) - + & % ' < + ' * # (% &) (+ ' * < + E + * # E A + & -) " - % ' * A) &) * E # - @) & *) * A + ' * # C # 6 () (% * (% & % A & + \$) L M + * % D * < + ' * % H = % " - % E % " - % D *) * % \$) ' M + B * , E * < + ' * + ' N " < #) D * (+ ' * Z d *) 6 = " + ' * H = % * & % A & + \$) &) E D * Z X * " M + * = - # 6 K) &) E * + * n > + & + U 8 7 * % *) A % ") ' * Z * = - # 6 K + = D * # " - % &) @ # " (+ * = E) * V " # <) * \$ % K B *

C " ! D ' \$ 3 7 (5 & / * B 5 3 , < 7 \$ / 7 3 ,

, ' - % *) & - # @ + * - % \$ % * < + E + * C J % - # \$ + *) A & % ' % " -) & * = E * 8 7 * H = % * # " - % @ &) * . % - + (+ 6 + @ #) ' * 2 - # \$) ' * Q ' * - R < " # <) ' * (% * . ; , D * A) &) * & % (= K # & *) * A & + C) C # 6 () (% * (% & % A & + \$) L M + * % * % \$) ' M + * (+ ' *) 6 = " + ' * (+ ' * < = & ' + ' * ,) ; D * (% * > + & E) *) = C # 6 #) & * + * A & + > % ' ' + & % * + *) 6 = " + ' * + * A & + < % ' ' + * (% * % ' ' # " + * % *) A & % " (# K) @ % E D *

g + " > + & E % * + ' * & % ' = 6 -) (+ ' * () *) A 6 # <) L M + D * + * (% ' % E A % " ? + * (+ ' *) 6 = " + ' * ") * (# ' < # A 6 # ") * H = % * = - # 6 K + = * + n > + & + U 8 7 * < + E A) &) (+ *) * (# ' < # A 6 # ") * H = % * " M + * = - # 6 K + = * > + # 6 % \$ % E % " - % * ' = A % & # + & D * \$ # ' - + * H = % * > + # A + ' ' 0 \$ % 6 * \$ % & # <) & * + *) = E % " - + * () * E R (#) * () * - = & E) * % *) * A) & - # < # A) L M + * % > % - # \$) * (+ ' *) 6 = " + ' * " + * A & + < % ' ' + D * <) &) < - % & # K) (+ * < + E + * A + " - + ' * A + ' # - # \$ + ' * % *) + * E % ' E + * - % E A + * A & + E # ' ' + & % ' * < + E *) * = - # 6 K) L M + B * P + & -) " - + D * (#) " - % * (+ ' * " V E % & + ' * % * (+ ' * (% ' % E A % " ? + *) 6 <) " L) (+ ' D * & % > + & L) U ' % * H = % * + * E + (% 6 + * (% 8 7 * # " (= K *) * # " - % &) L M + * % " - & % * + ' * # " - % @ &) " - % * ' (+ * @ & = A + * % * + * A & + > % ' ' + & D * H = % * A + (% * < + * - & # C = # & *) * H =) 6 H = % & * E + E % " - + * < + E * < + E % " - T & # + ' * 0 > % % (C) < / 4 " ") ' * & % ' A + ' -) ' * % " \$ #) () ' B * 2 ' ' # E * ' % " (+ D * > + E % " -) *) * < + 6) C + &) L M + ") * & % ' + 6 = L M + * () ' *) - # \$ # () (% ' B * 3) # ' >) - + & % ' * & % > 6 % - % E * ") * E % 6 ? + & #) * () * E R (#) * () * - = & E) * % * ") * < + E = " # <) L M + * (+ ' * % " \$ + 6 \$ # (+ ' B *

g + E + * - &) C) 6 ? + ' * > = - & + ' D * A & % - % " (% U ' % *) A & # E + &) & * + * > = " < # + ") E % " - + * (% * & % < + E % " () L M + D * (% * > + & E) *) * A % & E # - # & *) * # " (# <) L M + * (% * \$ 0 (% + ' * % * 6 # \$ & + ' D * C % E * < + E + * # " < 6 = # & *) * # E A 6 % E % " -) L M + * (% * . % - + (+ 6 + @ #) ' * 2 - # \$) ' *) (# < # + ") # ' B *

45<5&E\$67/3,

2<+'-)'D*: B*gb7%)-%@=#D*, B*]B*]%)&D*Pb*2b*0XYZ`4b*7%<+E%"()LM+*(%*<+'-V(+*%E*
=E*)EC#%"-%*<+6)C+&)-\$+*(%*2A&%"(#K)@%E*])'%)()*%E*P&+J%-+'B*7%\$#'-)*
]&)'#6%#&)*(%*9">+&ET-#<)"*)*, (= <)LM+*07]9, 40*Xh0Z40*bZUZZZB*

2(")'D*. B*!((#''D*. B*9B*_?)''D*, B*26?)&#-?#B*I B*8B*2E#''D*8B*26K)?&)'#B*2B*2b*0YXX4B*
,)&6#%'-'P+' '#C6%*/6+C6*)''(*i+<)6*9''-%&A&#-)-#+'*+>*8-=(%''-'*P%&>+&E)''<%*#''*
5#&-)=6*i%)&''#''@*, '\$#&+"E%"-'CF*i%\$%&)@#''@*, cA6)#'')C6%*29B*9,, , *2<<%*'D*ZYD*
ZXb`kdUZXb`hkB*

2E)&)6*/B*8B*7)E+'D*; B*]B*7)E+'D*9B*. B*. B*: 6#\$%#&)D*, B*ub*3B*0YXXZ4B*!E*'#'-E)*
(%* &%<+E%"()LM+*(%*%'&-&-R@#)'*(%*)A&%"(#K)@%E*C)'%)(+'*+*A%&#B*(%*
E+-\$)LM+*(+*)6="+t*8#*7, 2B*9''t*8#E Af'#+*]&)'#6%#&+*(%*9">+&ET-#<)"*)*, (= <)LM+*
08]9, 40*j Z`Uj Xj B*

2"(&)(%D*3B*i B*26E%#()D*gb*. B*. B*])&C+'')D*eb*i B*5B*7#@+D*8B*eb*0YXXZ4B*. %-+(+6+@#)'*
2-\$#)'*#''-%@&()')*)*=E*8#'-E)*(%*7%<+E%"()LM+*%*. #'%&)LM+*(%*;)(+ '*
, (= <)<#+'')#*A)&)*E#-#@)LM+*(%*%)'M+*%E*,); B*9''t*8#E Af'#+*]&)'#6%#&+*(%*
9">+&ET-#<)"*)*, (= <)LM+*08]9, 40`XkU`d^B*

2"(&)(%D*3B*i B*26E%#()D*gb*. B*. B*])&C+'')D*eb*i B*5B*7#@+D*8B*eb*0YXXd4B*2\$)6#)LM+*(%*
=E*E+(%6+*(%*8#'-E)*(%*7%<+E%"()LM+*H=%*#''-%@&)*. %-+(+6+@#)'*2-\$#)'*%*
. #'%&)LM+*(%*;)(+ '* , (= <)<#+'')#*A)&)*E#-#@)&)*%\$)'M+*'')*, (= <)LM+*)*
; #'-N'<#)B*9''t*8#E Af'#+*]&)'#6%#&+*(%*9">+&ET-#<)"*)*, (= <)LM+*08]9, 40*Z`j UZb`B*

]I%&D*7B*9'+-)'#B*8B*g)&\$)6?+D*2B*0XYZZ4B*. #'%&)LM+*(%*;)(+ '* , (= <)<#+'')#*t*
: A+&-="#()(%*'A)&)*+*]&)'#6B*7%\$#'-)*]&)'#6%#&)*(%*9">+&ET-#<)"*)*, (= <)LM+*
07]9, 40*Zb0X40*dUZdB*

]&%#E)''D*i B*0YXXZ4B*7)''(+E*I+&%-'B*.)<?#''%*i%)&''#''@D*k^0Z40^UdXB*

g?)''(&)'%I)&)'D*; B*3?#&=")\$=I I)&)'=D*/B*8B*i #-6%>)#&D*/B*0XYZh4B*g+66)C+&)-\$%*
i%)&''#''@*, cA%&#%"<%*+>*8-=(%''-'*#''* ; #'-)''<%* , (= <)-#+'B*9''t*9''-%&)-#+'')6*
8FEA+'#E*+'*P&+J%<-*2AA&+)<?%'*#''* , "@#''%&#''@*, (= <)-#+'*)''(*2<-\$%*
i%)&''#''@*#''* , "@#''%&#''@*, (= <)-#+'*m+&I'?+AD*bYUbbB*

g+'-)'D*1B*3B*I%&)'''(%'D*. B*2B*0YXXd4B*7%<+E%"()LM+*P%()@f@#<)*P%&'+')6#K)()*)*
A)&-#&*(+*8%H=%"<#)E%"'+*(%*2L\%*']')%)(*)*)*3)c+''+E#)*(%*]6++E*%*'+*
P%&>#*7289*=')''(+*A6)''%J)E%"'+*%E*9''-%6#@S"<#)*2&-#>#<#)6*)A+#)(+*A+&*
26@+&#-E+*/%''R-#<+*. =6-#+CJ%-#\$+B*9''t*g+''@&%''+'*]&)'#6%#&+*(%*9">+&ET-#<)"*)*
, (= <)LM+*0g]9, 40*ZUXB*

g="?)D*I B*: B*. B*8#%C&)D*gb*2B*0XYZh4B*.)A%)E%"'+*#'-%ET-#<+*'')*6#-%&)--&)*
)<)(SE#<+U<#%"-0#<)*'+C&%*)C+&()@%''*A)&)*'+&E)LM+*(%*@&=A+'*%E*, U
i%)&''#''@B*7%\$#'-)*]&)'#6%#&)*(%*9">+&ET-#<)"*)*, (= <)LM+*07]9, 40*Xk0d40*Zj UdYB*

l%6(E)"U.)@@+&D*yB*]6+"(%&D*7B*3=\$#U2&)(D*9B*0XYXX4B*i%-*-%E*<?+++'%t*:A-#+")6*
)''#@E%"-'*")(*+'6#"%6%)&"#@"A)--%&"'*)'A&%(#<-+&'*+>'=<<%''*#''+'6#"%*
@%''%&)*<?%E#'-&F* <+=&'%B*3?%*9''-%&"%*)"(*U#@?%&*,(=<)-#+D*^D*ZYY`hjB*
,6'%\$#%&B*

e)F)A&)I)'?D*8B*_&#'?")D*8B*5B* eB* 0XYXY4B* P&%(#<-#"@*8-=(%"-'*2<)(%E#<*
P%&+&E)"<%*='#"@*)""9EA&+\$%(*7)"(+E* l +&%-'*g6)'#>#%&B*9''t*9''-%&")-#+")6*
g+>%&%"<%*+'*,E%&@#"@*8E)-*g+EA=-#"@*)"(*9">+&E)-#<'0,8g94D*Xd`UXkdB*
9,, ,B*

+'-+A+=6+'D*/B*+-'#"-'#D*8B*P%&&)l%)D*gB*_+=-+'#l+'D*/B*/&))#"D*/B2B*
0XYZ`4B* l +&%<)"-'#@*'-(%"-'z'='<<%''*#''*)""+A%""="#\$%&'#-FB*9''-%&")-#+")6*
e+=&")6*i%)&"#@"@*3%<?" +6+@FD*ZdD*XhUkdB*

+'-+A+=6+'D*/B*&6+'D*8B*_+-'#"-'#D*8B*0XYZb4B*. =6-#G* i%)&"#@"@*>+&*,)&6F*
P&+@+'#*'+>2<)(%E#<*P%&+&E)"<%t*2*g)'%*8-=(FB*9,, ,*3&)"')<-#+""*+'*
i%)&"#@"@*3%<?" +6+@#%'DZX0X4D*XZXUXXkB*

i#D*iB*/=+D*7B*u)"D*. B*0XYZ`4B*: "U; %E)"(*5#&-)=6*i%<=&%t*P&+E+-#"@*2<-#G*
i%)&"#@"@*#''; #'-)"<%*i%)&"#@"@B*9''t*9''-%&")-#+")6*g+>%&%"<%*+'*,U,(=<)-#+D*,U
]='#""%''*)"(*,U3%<?" +6+@F*09g,]34D*ZU^B*2g. B*

i#E)D*,B*8#%C&)D*gB*0XYZj4B*g+66)C,(= <t!E)*l%&&)E%"-)*(%*g+6)C+&)LM+*%E*
P%H=%''+'*/&=A+'*A)&)*P6)->+&E)"(*2A&%"(#K)@%E*)*; #-N"<#)B*9''t*8E Af'#+*
]&)'#6%#&+*(%*9">+&ET-#<)"*)*,(=<)LM+*08]9,4D*ZjYjwZjZhB*

.)"?"M%'D*iB*. B*]B*;)g&=KD*8B*. B*8B*g+-'-)*7B*eB*. B*{)%)6%-)D*eB*{#EC&M+D*/B*0XYZZ4B*
P&%\$#M+*(%*%'=(%)'-%*'<+E*&#<+*(%*%)\$)'M+*=-#6#K)"(+*-R<'#<)"'(%*E#''%&)LM+*
(%*(+)'B*9''t*8E Af'#+*]&)'#6%#&+*(%*9">+&ET-#<)"*)*,(=<)LM+*08]9,4D*Z^YUZ^bB*

.)&)"@="#|D*1B*/&)"#|D*2B*0XYZk4B*3%<?" +6+@F*)<<%A-)"<%*E+(%6t*)*6#-%&)-=&%*
&%\$#G*-&+E*Zb`h*-*XYZdB*"#\$%&')6*2<<%''*#''-?%*9">+&E)-#+""8+<#%-FD*ZkD`ZU
b^B*8A&#"@%&B*

.)&#"?+D*eB*yB*8B* l %&)"(%'D*; B*yB*8B*0XYXd4B* l +&E)LM+*(%*&=A+'*?%-&+@S''%+'*(%*
%'-=(%)'-%*'A)&)*)*A6#<)LM+*(%*P&T-#<)"*2-#)\$)'*(*2A&%"(#K)@%E*B*7%\$#'-)*
]&)'#6%#&+*(%*9">+&ET-#<)"*)*,(=<)LM+*07]9,4D*dZD`jUZZZhB*

: 6#\$%&)D*. B*/B*1%\$%'D*2B*i+A%'D*. B* l B*8B*. %(%#&+'D*U B* l B*2"(&)(%D*. B*]B*7%C6#''D*iB*
iB*0XYZ`4B*!E*<=&'*+*(%*A&+@&)E)LM+*)*(#'-N"<#)*<+E*E%-+(+6+@#)'*)-#)\$)'*%*
)"T6#%*(%)A&%"(#K)@%E*A+&ER-#<)"'(%*' +>-G)&%B*7%\$#'-)*1+\$)'*3%<' +6+@#)'*
)"*)*,(=<)LM+*07,1:3,4D*Z^0Z4D*ZUZYB*

P%&%&)e="#+&D*gB*xB*2&)VJ+D*7B*; B*; +&L)D* l B*2B*0XYXd4B*!E)*C+&()@%E*A)&)*)*
&%<+E%"()LM+*A%&+'")6#K)()*(%*E)-%&#)'#*(=<)<#+")#*A+&*E%#+*(%* l #6-&)@%E*
])'%)()*(%*E*g+>-%V(+*%E*2EC#%"-%'*5#&-)=#*(%*2A&%"(#K)@%E*B*7%\$#'-)*
]&)'#6%#&+*(%*9">+&ET-#<)"*)*,(=<)LM+*07]9,4D*dZD`j dZUj ^`B*

a=%#&+@)D*,B*. Bdg%<?#" %6dgB2@=#)&D*. B8B0XYZb4B! E)*)C+&()@%E*A)&)*A&%(#LM+
(%%" -)=()" -%' %E*#<+*=-#K)" (+)t@+&-E+'*%R-#<+'*%E#" %&)LM+*(%*)(+ 't
=E*%' -(+*(%<)' +*<+E*() (+ '* (%=E* <=&' +*-R<"#<+*)*(#'-N"<#)B9"t8#EAf'#+*
]&)' #6%#&+*(%9">+&ET-#<)"*)*, (=)LM+*08]9, 4D*ZZbUZX`B*

a=%#&+@)D*,B*. BDP)&)@)&#" +D*5B*7Bdg)')'D*2B*PB*P&#E +D*3B*3B*. =" +KD*7B*7)E + 'D*5B*
gBdg%<?#" %6dgB0XYXX4B*,cA%&#E%" -#" @*i%)&"#" @*2")6F-#<'*)" (*, (=) -#+")6*;)-)*
. #'#" @* #'* (#>%&%" -* % (=) -#+")6* <+ "-%C-'*)" (* 6%\$%' B* 9"t' i) -#' * 2E%&#<)"*
g+ ">%&%" <%+ "'i%)&"#" @*3%<?" +6+@#%' *0i 2gi: 4D*ZUbB9, , , B*

8)"<?' D*mb*. BDI %&#&#&)D*IB*{B*, \$)6(D*PB*eb*; B*: B*5)&@)'D*2B*PB*] %KD*eb*i B*] +-%6?+D*8B*
8B*gB*0XYXd4B*2A&#E+&)" (+)*%cA%&#S"<#)*(%)A&%" (#K) (+*%E*)EC#%" -%' + "6#" %*
E)' '#\$+ 't*+A)A%6* (+ '*# -%E)' * (%&%<+E%")LM+B*9"t8#EAf'#+*&)' #6%#&+*(%
9">+&ET-#<)"*)*, (=)LM+*08]9, 4D*ZhkUZj kb*

8?)>#HD*; B*2B*.)&)"#B*. BDu)CC%CD*7B*2B*2B*2' #&\$)-?)ED*; B*0XYXX4B*2*g+ "<%A=)6*
P&%(#<-\$%2")6F-#<'*. +(%6*>+&-*?9(%"-#<#)-#+ "*" +>)-U&#I *-=(%"- '#""5i, *= '#"@*
.)<?#" %*i%)&"#" @*3%<?" #H= '%B*9"t9"-%&") -#+")6* g+ ">%&%" <%+ "'*.)-?%E)-#<'D*
2<=)&#)6*8<#%" <%D*g+EA=-%&8<#%" <%*)" (*8)-#-#<'*0. 2g84D*ZU`B9, , , B*

8#6\$)D*IB*;))*8#6\$)D*eb*8#6\$)D*7B*I + "'%<)"D*iB*gB*0XYZ^4B! E*E+ (%6+*A&%(#-\$+*A)&)*
(#)@'f'-#<+*(%*\$)'M+*C)'%)(+ ")*' #'-%&)L\%'* (%*)6=" + '*%E*>f&=" '* (%*
(#<='M+B*9"t8#EAf'#+*&)' #6%#&+*(%9">+&ET-#<)"*)*, (=)LM+*08]9, 4D*ZZ`jU
ZZbhB*

8#6\$)D*eb*3B*8#6\$)D*9B*. B*0XYXY4B! E)*&%\$#M+*' #' -%ET-#<)*'+C&*)*)A&%" (#K)@%E*
C)'%)()%E*A&+C6E)' '*+*%' #' +*(%g#S"<#)'B*P%'H=#')*%*, "' #' +D*ZD*ZUXbB*

8#6\$)D*5B*I %&#&#&)D* uB*3+&#%'D*2B*7+ (&@=%'D*IB*0XYXZ4B*.)-?*8=@@%' -#+ "t*=E)*
>%&#E%" -)*(%&%<+E%")LM+*(%*: CJ%-+*(%2A&%" (#K)@%E">=")E%" -)()' '*+ '*
A&#" <0A#+'* ()'*)\$)6#)L\%'* (%*2=-+>#<T<#)* %* 2" T6#%'* (%* ; %'EA%" ?+B*9"t
8#EAf'#+*&)' #6%#&+*(%9">+&ET-#<)"*)*, (=)LM+*08]9, 4D*Xdj UXk`B*

3)E)()D*. B*/#=' -#B*7B*1%--+D*eb*0XYXX4B*P&%(#<-'@*8=-(%"- '*)-*7#I *+>; &+A+=- #'*
3%<?"#<)6*g+& '%!' #' @*i. 8*i+@'B*, 6%-&+ "'#<'D*ZZ0d4D*kh`B*

3+E)' %\$#<D*1B*/\$+K(%" +\$#<D*1B*5&)"%'D*8B*0XYXY4B*2"*+&\$%\$%G*)" (*<+EA)&#+'*
+>* '=A%&\$#%(* ()-)* E#"#" @* -%<?"#H=%' * >+&' -=(%"-* %c)E* A%&+&E)"<%
A&%(#<#+"B*g+EA=-%&'*)*, (=) -#+ "D*ZkdD*ZUZ`B*, 6' %\$#%&B*

3&)"D*3B*PB*eb)"D*3B*_G%D*8B*1B*0XYXd4B*i%)&"#" @*2")6F-#<'*>+&9EA&+\$%(*g+& '%*
; %6#%\$&F*2AA6#<)-#+ "')" (*3%<?"#H=%'B*9"t9"-%&") -#+")6* g+ ">%&%" <%+ "'*; #@#-)6*
3%<?" +6+@F#"*, (=) -#+ "09g; 3, 4D*ZYYUZyhB*

! -)&#B*. B*m)&' #-+D*]B*_=' =E)"#" @&=ED*7B*0XYXY4B*9EA6%E%" -)-#+ "*" +>;)-)*. #'#" @*
>+&* ; &+AU: =-* P&%(#<-#+ "' = '#"@*7)" (+E*I +&%-'* . %-?+(B*9"t9"-%&") -#+")6*
g+ ">%&%" <%+ "'9">+&E)-#+ "*)" (*g+EE="<#)-#+ "3%<?" +6+@F*09g+9g34D*ZU^B9, , , B*

m)?%%(Uu)'')"826+?)"#17u)&(E)"e266F)"81)G)K70XYXY4P
P&%(#-&@*)<)(%E#<A%&>+&E)"<*>+'-'=&+E*5i,*C#@*()-)*='#@*(%%A*
6%)&"#@*E+(%b'g+EA=-%&'*'*u=E)"*]%?)\$#+&ZYk0Z4U*ZUZdB*,6'%'\$%&B*

m)?%%(Uu)'')"81)G)K726+?)"#177g?%"U*/U*/)'%\$#<U*;B0XYXd4P
,)&6F*A%&(#-&+""*>6%)&"%&'*)-*&#I*#"'"%6>UA)<%(*(=<)-#+t*2""%=&)6*""%-G+&I*
)AA&+)<?B*,cA%&-*8F'-%E'*G#-?*2AA6#<)-#+""U*XZd024U*ZZ`h`B*,6'%'\$%&B*