



## C.C.E का उपयोग

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## KEYWORDS

iLrkouk

ij: Hkjr e deok'k lhh ikurk e vc bl uohu f'k{k i.kkyl ykx dju dk ekul cu x;k g A jktLFku ljdkj u feMy Ldyk e lu 2010 e lhhb' dk ikbykV ;ktuk d :lk e vyoj o t ;ij ftykLi : 'k: dh xbi Fkh A

vkt og jkt; d lElr ftyk d 20000 gtkj l T;knk Ldyk e ykx dj nh xbi gA ;g ioorh f'k{k l dkQh fkhku g A vfr l'ki e bl: bl idlj crk;k tk ldrk g&

1-lc cPpk dk fcuk irkfMr fd; f'k{k o Klu c<ku dk volja

2-ir;d cPp dh ixfr ij fuxg j[huk ]lh[ku e vk jgh ck/kvk dk nj djuk mldk li.k fodkl dk i;Ru djuk mli vPNk ukxfjd cuku A

3- lhh xftt;u l l ykg e'kfojk djuk ] cPp d cjk e lpu nuk A

4 ij[hk l c/kh V'ku dk nj djuk A cPp dh ifrhhk dk mhhjuk o mldk li.k fjdkM j[huk A

bl d fy; f'k{k dk 2 Hkxk e ckVt tk ldrk g & 1-'kf{d o 2-lg'kf{d

'kf{d e lkekU; fo'k; tli fgunh [xf.kr] vxth i<k; tkr gA

lg'kf{d e thou dk'ky]jpukRedrk JoKkud dk'ky]nljk d ifr jo; k] yxu]dyk] ufrd f'k{k [LokF;];kxk jcxokuh [LdumVx vfn l cPp dk lgh fodkl fd;k tkrk gA

l= d vUr e xfmX i.kkyl l mudk foLrr fVli.kh d lfk eY;kdu fd;k tkrk gA

bl e igy; dh i.kkyl dh rjg dkb ck/rk ugh g fd 33 ;k 36 ifr'kr ij gh ikl gk dj vxxy d[kk e tk;xk ; [fi ,d iekul t : j ekul tkrk g fd bl d[kk e de l de bruk lh[kuk pfg; ]l= d vUr e lElr d eY;kdu dk ;gh m]' ;g ldrk g A

bl i.kkyl d ey fcUn& f'k{k e vc igyk tkj yhuix ij g fd cPpk fdruk o fd l xfr l l h[k jgk gA mldh bl cjk e vk jgh fndDrk dk nj fd;k tk; A

tc ;g Ldhe jktLFku e ykx dh xbi rk ;g dYiuk dh xbi Fkh fd cPp [c l h[kx o v ;kid hkh [c tkj'k'kh l i<k;x ij Qy ugh dju dh ilfyll l Nk=&v;kid nkuk <hy; iM x; fd vc fdll idkj dh ck/rkr rk g ugh A ukxfjd u bl rjQ ljdkj d ;ku fnyk;k rk jktLFku ljdkj u 'fu'kYd vfuok; cky f'k{k dh vf/dkj dh /kjk 8 e l'k/ku dj ;g iko/ku fd;k fd 6 l 14 lky dh me d ir;d cyd dk d[kk e ' yfuix yoy \*n[kk tk;xk D;k fd jktLFku e gblDy Dyklit dk yfux yoy rk Bhd g ij feMy Dyklk rd dkQh [kjk g A

ljdkj u bl d fy; ekulVfjx ij tkj fn;k gA lcyu ;ktuk e txg &2 i'kklfud vf/dkj] jlel[k] lof'k{k vfhk;ku o f'k{k fohkx yfuix yoy dh IQftdyh pfdx dj jg g A

2- IQ (Intelligent Quotient) d lfk EQ (Emotional Quotient) ij fuxjkh j[huk o bl d fodkl dju dk gA

vkf[kj f'k{k dk lgh m]' ; cPpk dk vPNk bulku [d'ky] cf}eku o

lkelftd ukxfjd cuku gA bl gr; tkudkj [rd 'kDr jhh'k ] MkVt ] fol/[ Klul foKlu d Klu d fy; ; 'kf{d {k= e dk; fd;k tkrk g A

nljk d ifr jo; dh tkudkj [lok &hhkouk ] lgu'hryk [mnjrk ] T;Ynh Qlyko e vku deh [dBjrk [dVVjrk] un;rk [ykijokgh ;k oQnkjh [cf}erk [dYiuk'hryk] l dV e dk; i.kkyl [cgnjh [vij/kh iofr [dkepkh vfn iofr; dk cpiu e gh ldr fey tkr g Abudh tkudkj dj lgh fn'k nh tkrh gA budk fjdkM lg'kf{d {k= e j[hk tkrk g A

3- rhljk m]' ; ij[hk i.kkyl l gku oky ruko dk nj j[huk gA

Ldy bl idkj d gk fd cPp tku e [k'kh vuukh dk o g idkj d mre fodkl dk ikr djo o vf/dk/kd Klu ikr dj l dA

4-pkFk fcUn [ir;d fo[kFk dk fjdkM o lfvQdV ftle; mldk xM o miyf[k]dk; &0;ogkj d cjk e foLrk fVli.f.k; gkrh g rlf d hfo'; e dke vk; A

ICT (Information Communication Technology) D;k g\

according to Wikipedia it is defined as a “diverse set of technological tools and resources used to communicate, and to create, disseminate, store and manage information”. These technologies include computer, Telephony, Internet and broadcasting technologies .

gky d o'kk e del;Vj o buVjuV u vkiplfd o vukiplfd nkuk f'k{k d {k= e dkr dj nh g yfdu ICT flQ mi;Dr {k=k rd gh lhr ugh dh tk ldrh A ble jfM;k ] Vyhotu ] ekcbY Qku]LykM]iktDVj]xtVl] Document Camera ,lhh Voh dejk] Xyky ikt'fux fllVe] chM] gkMXl] vfm;k&fofvy llexhgm fMdl] iu Mkbo ] ebdkQku]LokF; tkp d MRI ,EEG ,BP, Weight ,Blood Test d vk/fud midj.k ftue fjdkM j[hk tk ldrk g ftue lpu; gkrh gA

dbi fo'huk dh jk; g fd “ software and hardware both that is used to transform our knowledge is ICT” A ;kfu vk/fud dky d cgr l l l/kuk dk f'k{k txr e mufu d fy; mi;lx dj ldr g

dN ikboV lLFkuk e cgr l h txg d[kvk e ykMMLhdj dk i;lx gk jgk g fo'k'kdj cMh d[kvk e A de luu oky fo[kFk; d fy; ;g ykkin gk jgk g A ikojikbV dh LykMh l egroi.k ckrk dk de le; e le>ku l hko gvk g A buVjuV l eupgh llexh miyCk gkrh g A ekcbY l ljk dkl dh r;kh gj txg fdll hkh Vibe dj ldr gA f'k{k llexh eekjh dkl]iu Mkbo e FkhMh l h txg e cgr ljk MkVk LVkj dj ldr gA lhmh johlhm l ?k cB fcuk fdrk i<lb dj ldr g A

E-Learning d jk?kj cB i<lb dj ldr g ] eVfj;y exok ldr g [ijhkh n ldr g leY;kdu dj ldr g ;k djok ldr g lyVLV ixfr l voxr gk ldr g A v[kcjh e Nik g fd Hkjr 90 ifr'kr MkDVl uV l bykt <u yx g A

(C.A.L.) Computer Assisted Learning e dklit d cu cuk; ekM;y l fohkku fo'k; tli vxth [oKku]xf.kr [dihV'ku dkl vfn dk v; ;u fd;k tkrk gA

CBSE d db Ldyk e Multimedia dk i; kx gku yxk gA

db ikboV Ldy NkV ykmLIhdjk | display Monitors | document Camera , iktDVjh in'kfu; k] foklu eyk | ekckby d tfj; ekr&firk l l i d dju jnug cPpk dh ikx l fjdKM fn[kku jVoh &jfM; k ij ixxe fn[kku e fd; k tku yxk gA dEI; Vj e l kjk fjdKM j[kk tkrk g] ; ktuk cukuk iLrphdj.k fd; k tkrk gA

Teacher Education e NCERT ,SIRT, RMSA, SSA ,Training Schools e db rjg l ICT dk fofkkU : ik e i; kx gku yxk g A digital Technology ftuei dEI; Vj | ohlMh fiVj] LykbMl vkfn dk lgkj fy; k tkrk gA

bh idkj ge CCE e fofkkU ckrk d fy; ICTdk i; kx dj ldr g A

ICT l Ykkk

foKlu u ielf.kr fd; k g fd ê'; &J0; Ikexh l le>u o ; kn j[ku e of] gkrh g jkpdrk ink gkrh g | uohurk vkrh g bUVj&, fDVfoVh <rh gA v; kidk dk ckj &2 iKB r; jk dju l jgr feyrh gA dk; i 'khpkrk] l xerk o <x l gkrh gA db d[kvk; , d t xg fcBk dj , x t fd; k tk ldrk gA Vhpj ugh gk rk fo | kfk [kn i < i < k ldr g A oreku e Vhpj dk arrangement lc d fy; flj nn' cuk gvk gA bldk lek/ lku bl uolu i. lkyh e << ldr g A

Nk= dEI; Vj | ykmLIhdj] LykbM 'kkjMkd; eV de j iktDVj ; k ekukVj l 'kfkid iKB fn[kk; k tk ldrk gA

NkVh d[kvk e yfuix d oKkfud fl) kkrk dh tkudkj Nk=&v; kidk dk gkuh ykkin g D; kfd vPNh yfuix ij gh l h- l- b - fvdh gb gA bl l lcf/kr ckrk dk /; ku j[kuk mfrp gxxk A ; vk/kfure [kktk ij vk/kfjr g A

iheP; kj cPp dk fneX 3&4 lky rd de fodflr gkrh gAcn e Hh mld c<u dh jfrkj /heh gkrh gA og viu xi e fofp= 0; ogkj dj ldrk g j bldk /; ku j[kuk pfg; A U; jkykftdy fMoyieV o yfuix e ge'k fo'k' l c/k jgrk gA , d l fodflr cPpk dk , d xi e j[kuk pfg; pfg mld Hkfrd me fdruh Hh gkA , Mfe'ku d le; xft; u l iN dj fjdKM e j[kuk pfg; A ftu cPpk dh chekh jInel] ekr&firk d ie l ofpr] vR; kpkj d f'kdj jgu] vLfek j[ku dh vf/kd deh ] de luu] gdyku] Hk'k l c/kh fnDdr jgu jdkfud Mk; f; j; k t l jxkh l ihfMr jgu dk bfrgk gk rk fjdKM e y dj mlg lku dh yku e cBk dj fo'k' /; ku nuk pfg; A ; cgrj gk vyx i < k tk; A bldk fy; vf/kd v; kidk dh t : jr iMxh A

**Learning disability , dyslexia** oky cPp i < kbi e ge'k detkj jgr g ij mudk fneX mrud detkj ugh gkrh A db gdy cgr , DIIV n[k x; g A o l h[ku dk vyx < jk viukr gA **ADHD (attention deficit hyperactivity disorder)** t : jr l T; lnt , fDVo fo | kfkHh dk vyx rjhd l i < kuk gxxk A

(E.Q.) Emotional Quotient (HkoulRed vuikr) d fodkl d fy; ftdk eY; kdu lg'kfkid xrfrof/k d vxrx fd; k tkrk g d ckj e dN egroi. k rF; b l idkj g ftudk f'k'k k 0; oLFkk e mi; kx djuk mfrp gxxk &

vxj ge fo | kfkHh dk vPN 0; ogkj oky b l lku cukuk pgr; g rk cpiu e mld l fFk vPNk crko vo'; djuk pfg; D; kfd cpiu e motor skills, visual motor co-ordination, rasoning, language, social understanding dk neural network Lfkkfir gk tkrk gA (Semrud-Clíkeman, 2007)

foKlu dh [kktk d vulkj nljh d [kjc crko l fneX e LFkbb bEi'ku (k= (tracts) cu tkr gk cPp dk vxk d 0; ogkj dk Hkfrd d j; g A vr l Hh cPpk l ge'k /; ku i d crko djuk pfg; fo'k'kdj fefMy Dyklt rd 12 l 20 o'k dh me rd ble l'k/ku gkrh jgrk gA dN d Front Lobes 25 o'k dh me rd fodflr gk ikr g A 13 l 19 o'k dh me d fd'k'j f'k'kfkHh fn'k fun'k nu ij gh o vffkik; le> tkr g jvf/kd folrkj dh vko'; drk ugh gA o vf/kd fo'ok l l Hkj tkr g j dN vf/kd vktkn pgr; gA mud 0; ogkj d eY; kdu e ; g tkuu mi; kxh g A

fd'k'j volFkk e fneX dk Posterior Region ; kfu fiNy k fgLk (

xnu l 6 vxr Aj] vf/kd lfd; gkrk g ft l l vphoeV VLV] ocy ; k; rk t l i igM[kule] ehfuX l | vkfn jVUr l EcU/h dk; gkrk gA

vr l bu ckrk dh tkudkj f'k'kd & f'k'kfkHh dk ICT d tfj; le> k dj ykik mBk; k tk ldrk gA

v; kid

v; kidk dk eflr" d dh dk; i fof/ k d ckj e l; kkr Kku nuk lHk g A v; kidk dk egroi. k dk; i g Nk= dk , fDVo j[kuk D; kfd bl volFkk e gh fneX e v d lhtu cgyrk [ku iokgu gkrk g ft l l l kM; e ikVPk; e d vk; U l U; jkU l e rho xrfrof/k dju e leFk gkr g o fofkkU vehU l xii (amines) l kfor gkdj eM Hh vPNk cukr g ft l l i < u e vluu vkrh gA fneX d lgh dek dju d fy; mlei [ku dk l; kkr lpkj jguk pfg; A , d le; rd , d gh lV ij fcuk gjdr vf/ kd le; rd fcuk gjdr cBk; j[kuk blei ck/kd gkrk g A

v; kidk dk fo'k; d vudy okroj. k cukuk pfg; ruoi. k ughA 'kyeu, 1997 u crk; g fd eoeV vkj fotvvy f l lVe e Hh l c/k gA bldk Hk'k l Hh l c/k g & (fde] mxfjcy] f l lVd 1997) A bldk , d xrk l l c/k g & (dplu o , yu 1997) A bl l EEG fd; k; c<rh gA

vr l EEG, MRI, Heart Rate, blood test, Weighing vkfn dh tlp le; & 2 ij jxyjy dhuk pfg; rfd ekye iM fd fneX e v d lhtu llyb jU; jku , fDVfoVh dk Lrj D; k gA bldk fjdKM Hh j[kuk pfg; A Ldyk e cPpk dk nh tku oky vkbju dh xky; k vxkfud dEikmUM d : l e nh tk; rk vkkuk ip tk; o fj; D'ku Hh de dj; A buxkfud : l l iV nn jnL jHkjh u eg l l gk ldrk gA [kku d , d 2kV ckn yuk vf/kd l jfkr gkrk g ; g tkudkj l c v; kidk dk gkuh pfg; A

i < ku d fy; leLr l k/ku e l mi; Dr rjhd l k/ku dk i; kx v; kidk dk djuk pfg; A o l c l egroi. k dMh g A vk/kfud xitV l l fjdKM dk dek vkkuk l dj ldr g l t : jr d erfkcd l k/ku l l k < ldr gA ; g cr vyx g fd ; l k j vk/kfud l k/ku cgr egx gA budh j l k j kko ef' dy g vU; LVQ d t : jr iMxh A [kp d Hh lky gA

idVl

"deliberate practice occurs when an individual intentionally repeats an activity in order to improve performance. the claim of the DP framework to achieve high levels of expert level"- (Campitelli & gobet, 2011) ; kn j[ku dh fd; k dk Klu

idVl l h l h b dk egroi. k Hkx g A fd l h Hh leL; k dk gy fudkyu d fy; igy lcf/kr 2kVd dk vPNh rjg le> k tk; fQj mudk db LV l l e i; kx djuk le> k tk; rk fo | kfkHh vkjke l gy fudky ldr gAt l l t kM ckh fl [k fn; k rk mudk fofkkU leL; kvk e fd l idkj mi; kx fd; k tk ldrk gA ; g db ckj djuk pfg; rfd l Hh l h l l dA eekjh 2 idj dh ghrh g short term and long term A 'kVl Vel eekjh t c j k l k; fud ifd; k ) k j i j fneX e U; jkU l dk tky cuk nrh g o LFkbb ghrh g o ykx Vel eekjh e cny tkrh gA fneX , d ckj e l k/ k. kr; 7 vyx & 2 plit; kn j l ldr gA db tu efu vo/ k j. k l 40 & 50 rd l [; k ; kn j l ldr g ij foKlu dgrk g fd ; l c MkV tYnh Hkyk fn; k tk; xk D; kfd ble - ; ; dk vHk g f l Q J0; ekt n gA

vr l hek l vf/kd , d gh Vbi dh leL; k; gy djuk ykkin ugh gA

fd l h ud'k dk jvkctDV dk ckj ckj djuk o fu; fer le; ij nkgju l og vPNh rjg ; kn gk tkrk gA

dbi ckr ckj ckyulfojkj dju ; kn dju l og LFkbb gh tkrh gA ; g HkoulRed igy l Hh l c/kh gA

; g Hh n[k x; k g fd fo'k; dk NkV VdMh e ; kn djuk vf/kd iHkhh gkrk g ctk; , d yEc dky rd jVr yxuk ft l e fneX fkd tkrk gA

dk; n l kgeod d[kk e gh djuk pfg; o Vhpj dh l c ij fuxlg gkuh pfg; rfd deh idMh tk l di j /; ku jg fo | kfkHh dk dh l hfer l [; k gkuh pfg; ouk dN dk gh ykik fey ik; xkA 0; fDrx /; ku nu d fy; l; kkr l [; k e v; kidk dk fujrj gku] i j l e; nuk l k/ku gkuh vko'; d g ouk turk e bld rjdr ykik iR; k fn[kk b u nu l l d j k j b l i f j o f r i r Hh d j l d r h g A

fldy ; k dk'ky

lg'kfkid (k= e ge fldy d fodkl dh l Hkoulv k ij /; ku nr gA

fo|kFk; k dk db idkj d dk'ky dk dke nr g o eY; kdu djr g A

fldy d Hkx

v- **working memory**

fdlh lEl; k dk gy dju d oDr bUQke'ku dk ;kn j[kuk o mi; kx djuk A lpukv dk lgh de e mi; kx A Vhpj ' ;keiVV ij fof/k LVi& ckb &LVi fy[k rk fo|kFk vkIkuh l gy dj ldr g A

c- **Executive Functions**

fdlh ixke dk ijk dju d ckn D; k gvkjD; k ugh gvkjdgk del jgh | bu ij euu o l/kj A Vhpj vr e ldr n ldr g A mruk dkQh ykkin gxk A

1- **Planning and Organization**

information ,Process ,Object dk consolidated i; kx djuk | blei vku okyh fndDrk|l/kuk |[kp oxjg lkh i{k dk /; ku j[k dj dk; | djuk |MkV dk bdVBk djuk bl e ennxj gr g A ; g lh[k x; | dk mi; kx djuk g A

dk'ky e ckj ckj dju l ioh.krk vrh gA ijkuk xyfr; k ij fopkj fd; k tkrk g o lgh dju gr vU; fodVi <<k tkrk gAbIe; vf/d ukyt dh ctk; ,flyhd'ku dk vf/d eglo grk gA

,MfefuLV'ku

bl ij fuikj g fd vxj l[ku]midj.k jyk; d LVkQ miyC/k g rk mldk mi; kx gxk fd ugh vkj vxj gxk rk fd l idkj cnyrh ifjLFkr; k d erlfd vfxe 0; oLFk j[k ; g i'kkldlgMehLVj d Aij fuikj g A

bl d fy; | dkQh vk/fud i.kkyh ekt n gA budk lc d lFk vPNk lpkj lc/k gkuk |lkj fjdM dk gj oDr ekt n j[kuk | flFfr ij fuxg j[kuk vko'; d gA bl d fy; | k; ldr if'k{k.k fujh{k.k vko'; d gA gj iy dh flFfr dk Kku gkuk pkf; A

Ldyk feM M ehylukh jgok dh 'k}rk /; ku j[kuk pkf; A vkt dy gj pht e feykoV dk tgj Qyk gvk gA ICT l ttp dh tk ldrh gA

fty; dh lc d[kvk ]Ldyk dk cfdx fLve dh rjg ,d lUVy uVod l ftyk f'k{k vf/dkj dh dk; ky; l bUVjuV l tkMuk pkf; ; rkd fd ijh fuxjkuh jgA

lj{k d

lj{k d l 'k; e gh cPp d ckj e lkjh tkudkj ydj fjdM djuh pkf; ;

vc rk xitVl d db idkj d l/ku gh x; gmudh lg; rk l lid dk iikkoh o mi; kx cuk; k tk ldrk gA

7-okrkoj.k

oKlfudk u crk; k g fd okrkoj.k cPp dh ;kx; rk dk iikkfor djrk gA ; g de me e vf/d iikkoh grk g A <sup>M</sup> eflr'd chp&2 e rit Qgkj (sports) d :lk e fodflr grk g A; g xikkloLFk d 24 l 26 o l lrg

d chp]8 l 9 lky d chp]fd'kkjkoLFk e grk g (Semrud and Clikeman,Elison,2002)

vr l bl d /; ku j[kuk f'k{k e mi; kx gxk A 'kky e LoPNrk|l tloV| l; oLFk vPNk 0; ogkj l Nk=k dk eM Bld j[ku e enn feyrh gA

v- LohLF;

\*LoLFk 'kjhj e gh LoLFk fneix jgrk g \*\*

fdyuhdy v/; u e ik; k x; k g fd movement dh xrfrof/k jkt dh ifd; k e 'kfey gkuk pkf; A ( Texas &Austin &Personal communication ,1997)A

; g ckr Magnetic resonance imaging l Hh fl} gb gA xrfrof/k l fneix e U; jkVhQh l jlk; fud rRo c<r g A vf/d d'kd; ; curh o c<r

c- /; ku c<ku d fy;

spinning,crawling,rolling,rocking,tumbling,pointing vPNh grh g&(ikeyj2003)

tMrk nj dju d fy; ; aerobics,running,chasing,dance Bld grh g A

[ku d lpkj d fy; | dCMMh |QVcky|d'r|okylcky| eM 'kfr d fy; | 'kky d ckj V; vjleytky dh Hkhouk c<ku d fy; | xi [ky]J'Brk d fy; | bUMfotuy [kylgfer c<ku d fy; | Dykbfex mre g ftudk i; kx f'k{k e fd; k tk ldrk gA

l- ; kxk

; kxk flQ dljr ; k ihVh ugh g cfd 'kffjd o elufld nku d fy; | ykknk; d gA Hkjr; 'kL= bl d x; kxku l Hkj g; gA ; cgr mi; kxh g ij vyx &2 fo|kFk d fy; | fof'PB ; kxk p; fur gkuk pkf; ; A

lkj'k

cce vk/fudre f'k{k i.kkyh g ftle; 6 l 14 lky d lc cPp dk jpukRed lUnj ekgky e vPNh f'k{k nu d m|'; l ylx dh xbi g ftle; cPp ij fcuk fd l idkj dk neke Mky mud lolkx.k fodl ij; ku fn; k tkrk gA ble; lc cPp dk mudh 'kffjd elufld flFfr d erlfd vlx c<k dj ,d vPNk ; k; fteenkj bUlku cuku /; ; j[kk x; k gA ble; vk/fud l/kuk |tkudkj |Kku d vk/kj ij cPp d lh[ku]mg vu'kflr j[ku | mudk vf/dre l/kj|fodl dju o LVkQ jkjk vf/d dk'ky l euteV e vb-lh-Vh dk mi; kx fd; k tk ldrk gA p'Vk dh tk ldrh gA ble; vkffk d [p] i; klr if'k{kr LVkQ|kfrd l/ku e[ ; ck/k; ; g ftudk lku dju dh t: jr g A

## REFERENCES

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