

Academia Oamenilor de Știință din România

RAPORT FINAL DE CERCETARE

**Strategii pentru dezvoltare
economiei cunoștințelor
în România**

Tema de cercetare Nr.15/ 2018

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RAPORT FINAL AL PROIECTULUI NR 15
„Strategii pentru dezvoltarea economiei cunoștințelor în România”
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Conținutul acestui document prezintă sub forma unui raport final rezultatele cercetărilor pe tema „Strategii pentru dezvoltarea economiei cunoștințelor în România” pe durata celor 6 luni ale proiectului postdoctoral nr.15 sub egida Academiei Oamenilor de Știință, din România, Filiala București.

I. Aspecte metodologice privind cercetarea

Scopul fundamental al acestui program de cercetare a fost acela de a analiza opțiunile de strategii pentru dezvoltarea economiei cunoștințelor în România. Pentru îndeplinirea acestui demers amplu de cercetare am structurat patru obiective secundare prin a căror realizare să fundamentăm gradual ipoteza principală a cercetării. Cele patru obiective secundare reprezintă esența cercetării derulate pentru fiecare obiectiv în parte, astfel:

(1) Analiză factorială asupra competențelor studenților în economia cunoștințelor în România;

Considerăm că acest obiectiv a fost îndeplinit prin realizarea și publicarea lucrării cu titlul: *Factorial Analysis Perspectives upon Students’ Skills in the Knowledge Economy*, în cadrul revistei *Journal of Management Dynamics in the Knowledge Economy*;

(2) Determinarea perspectivelor studenților asupra competențelor necesare în economia cunoștințelor în România;

Considerăm că acest obiectiv a fost îndeplinit prin realizarea și prezentarea lucrării cu titlul: *Perspectives upon Students’ Skills in the Knowledge Economy*, în cadrul conferinței internaționale TAKE 2018;

(3) Evaluarea competențelor antreprenoriale necesare studenților în economia cunoștințelor în România;

Considerăm că acest obiectiv a fost îndeplinit prin realizarea și publicarea lucrării cu titlul: *Assessing Students’ Entrepreneurial Skills Needed in the Knowledge Economy*, în cadrul revistei *Management & Marketing. Challenges for the Knowledge Society*;

(4) Analizarea proceselor cheie de dinamica cunoștințelor și capitalului intelectual în cadrul organizației;

Considerăm că acest obiectiv a fost îndeplinit prin realizarea și prezentarea lucrării cu titlul: *The Key Processes of Knowledge Dynamics and Intellectual Capital in the Organization*, în cadrul conferinței internaționale *Strategica –International Conference – Sixth Edition*, „Challenging the Status Quo in Management and Economics”.

În continuare vom prezenta în detaliu, însă într-un mod structurat, obiectivele și rezultatele programului de cercetare: „Strategii pentru dezvoltarea economiei cunoștințelor în România”.

Pentru acest program de cercetare, conceptul de ”*economia cunoștințelor*” a fost elementul central și astfel se regăsește în fiecare dintre etapele și rezultatele cercetării. Cunoștințele au avut dintotdeauna un impact major asupra dezvoltării economice și sociale. În prezent, *economia cunoștințelor* este rezultatul revoluției cunoștințelor care a fost provocată de ideea că noua sursă de bogăție sunt cunoștințele și nu munca, nici natura și nici capitalul financiar, astfel încât resursele intelectuale și intangibile sunt cele care trebuie manageriate.

Într-o formulare sintetică, cunoștințele sunt informații procesate cu scopul de a înțelege fenomenele din mediul nostru înconjurător, și astfel înglobează un mesaj. Cea mai cunoscută tipologie, împarte cunoștințele în tacite și explicite. Cunoștințele explicite pot fi transmise codificat, prin mesaje scrise și verbale în schimb cunoștințele tacite sunt mai dificil de codificat și necesită interacțiunea și observarea directă a activităților și muncii împreună în scopul transmiterii lor. Spre deosebire de alte resurse care se epuizează prin utilizare, cunoștințele au proprietatea de ași amplifica efectele atunci când sunt împărtășite în cadrul organizației de către salariați de manieră transparentă și direcționată (Brătianu, 2015a, 2015b).

În cadrul cercetării din cadrul proiectului am analizat concepte și procese esențiale și specifice *economiei cunoștințelor* precum: cunoștințele și dinamica lor la nivelul organizației (SECI), cunoștințele ca elemente componente ale capitalului intelectual, învățarea organizațională și organizația care învață ca sisteme ce se bazează pe fluxul de cunoștințe, competențele viitorului ca cerințe și efecte ale economiei cunoștințelor. Dinamica cunoștințelor, are la bază modelul dezvoltat de Nonaka&Takeuchi (1995), și constă în patru procese continue: externalizarea, internlizarea, combinarea, socializarea, pe care managerii trebuie să le cunoască și să le stimuleze. (Davenport, 2000; Nonaka & Takeuchi, 1995; Steward, 1999) Pe parcursul derulării cercetării am ajuns la concluzia că în *economia bazată pe cunoștințe*, există o dinamică continuă între procesele de utilizare a cunoștințelor și procesele de creare a cunoștințelor.

După cum am precizat, rezultatele cercetării post-doctorale le-am publicat pe parcursul celor șase luni în reviste indexate în baze de date internaționale recunoscute de către Ministerul Educației Naționale a României: *Management Dynamics in the Knowledge Economy* (MDKE), *Management & Marketing* și la conferințe internaționale de prestigiu cu volume indexate ISI-Proceedings, precum: (TAKE) International Conference of Theory and Applications in the Knowledge Economy, organizată la Universitatea din Poznan, Polonia, în Iulie 2018, și Strategica International Conference, la Școala Națională de Studii Politice din București în Septembrie 2018.

Componenta de cercetare aplicativă în ceea ce privește *economia cunoștințelor* am realizat-o prin prisma cercetării competențelor necesare studenților într-o astfel de economie. Mai mult, această dimensiune a *economiei cunoștințelor*, ce se reflectă într-un anumit profil al viitorului salariat, am analizat-o, din perspectiva cerinței și ofertei, în ceea ce-i privește pe actualii studenți. Tema capitalului intelectual organizațional am abordat-o în conexiune atât cu fenomenul de dinamica cunoștințelor cât și cu problematica învățării organizaționale și astfel se regăsește într-un număr de lucrări publicate în reviste și la conferințe. Procesul învățării organizaționale este unul cheie pentru supraviețuirea și mai ales performanța organizațiilor de astăzi fiind interconectat cu multe aspecte ale managementului organizațional și economiei bazate pe cunoștințe. Lucrările mele sunt focusate pe descoperirea

conceptuală și pe reflecție asupra mecanismelor complexe (și de noutate) specifice economiei cunoștințelor în ceea ce privește domeniul instituțiilor de învățământ superior, și anume al universităților.

Consider că până la finalul perioadei contractuale am îndeplinit toate obiectivele asumate în cadrul proiectului de cercetare postdoctorala nr 15 cu titlul ”Strategii pentru dezvoltarea economiei cunoștințelor în România”. Prin intermediul acestui program de cercetare am reușit să aprofundez, pentru cazul României, ceea ce am studiat pe parcursul doctoratului și în perioada următoare, contribuind astfel la dezvoltarea domeniului strategiilor organizaționale în economia bazată pe cunoștințe.

II. Implementarea obiectivelor cercetării

Prezentul program de cercetare s-a concretizat prin derularea a patru cercetări tematice care se interconectează atât în sfera teoretică cât și în cea practică.

(1) Analiză factorială asupra competențelor studenților în economia cunoștințelor în România.

Considerăm că acest obiectiv a fost îndeplinit prin realizarea și publicarea lucrării cu titlul: *Factorial Analysis Perspectives upon Students’ Skills in the Knowledge Economy*, în cadrul revistei *Journal of Management Dynamics in the Knowledge Economy*.

Scopul principal al acestei cercetări a fost de a identifica nivelul necesar al competențelor studenților în funcție de cerințele economiei cunoștințelor. În această abordare, am evidențiat influența aptitudinilor generice care stimulează studenții să gândească strategic și să învețe prin experiențele lor. Pe parcursul secțiunilor lucrării, am evidențiat realitățile și caracteristicile economiei cunoștințelor și profilul generațiilor tinere de studenți care vor fi viitorii jucători fie ca manageri, fie ca angajați. Partea cantitativă a cercetării a fost realizată prin intermediul administrării unui chestionar de 30 de itemi adresat atât studenților, cât și absolvenților, înscriși în programele de studii de management și de afaceri de la Universitatea "Ștefan cel Mare" Suceava, România. Baza de date cu rezultatele a fost procesată folosind un software statistic - SPSS, v.19. Pentru a descoperi mai multe corelații inspirate despre opiniile respondenților, am procesat o analiză factorială pentru componentele principale. Această analiză prezintă factorii cei mai importanți care influențează comportamentul și opțiunile studenților în procesul de învățare. Considerăm că rezultatele unui astfel de studiu ar trebui să fie de interes pentru leadership-ul universității pentru a crește capitalul intelectual generat prin îmbunătățirea abilităților generice ale studenților.

Din punct de vedere al procesării statistice a datelor, rezultatele obținute au arătat că, studenții sunt conștienți de ceea ce este important pentru ei, aceștia apreciază foarte mult problemele de gândire strategică și de rezolvare a problemelor și, ulterior, un rating mediu, cu privire la colectarea și organizarea informațiilor. Acestea sunt principalele abilități care garantează faptul că vor deveni oameni de afaceri buni, antreprenori de succes sau manageri performanți. Abilitățile descrise sunt gândirea creativă și învățarea de a învăța deoarece solicită mai mult efort cognitiv, având în vedere timpul alocat studiului, riscurile și incertitudinea implicită.

Utilitatea acestei cercetări este aceea că poate fi un punct de plecare pentru schimbarea perspectivelor studenților în ceea ce privește procesul de învățare, pentru a le facilita dobândirea și îmbunătățirea calificărilor. De asemenea, ar putea fi utilă conducerii facultății în vederea adaptării curriculei didactice și a metodelor de predare pentru a redirecționa eforturile atât ale profesorilor, cât și ale studenților spre acest tip de competențe, care sunt foarte evidențiate ca fiind esențiale pentru noua generație de angajați și angajatori. Studiul actual oferă o perspectivă preliminară asupra percepției studenților de la o universitate din România cu privire la dezvoltarea abilităților generice și în pregătirea lor de a-și asuma rolul principalilor actori în procesul de învățare. Considerăm aceste informații valoroase, deoarece reprezintă un punct de plecare pentru elaborarea oricărei strategii de îmbunătățire a curriculumului sau a educației. Investigând percepțiile studenților și opiniile acestora, le putem înțelege mai bine nevoile și, astfel, putem oferi mai multă satisfacție oferind servicii educaționale mai adecvate.

(2) Determinarea perspectivelor studenților asupra competențelor necesare în economia cunoștințelor în România.

Considerăm că acest obiectiv a fost îndeplinit prin realizarea și prezentarea lucrării cu titlul: *Perspectives upon Students' Skills in the Knowledge Economy*, în cadrul conferinței internaționale TAKE 2018.

Acest obiectiv a avut ca rezultat formularea unor perspective asupra necesarului de competențe pentru studenți în contextul economiei cunoștințelor. Necesitatea acestui studiu se datorează faptului că predarea și învățarea tradițională au devenit insuficiente pentru mediul dinamic din zilele noastre. În acest sens, am evidențiat oportunitățile pentru a dezvolta acele competențe ale studenților prezenți în economia bazată pe cunoștințe. În această abordare, am evidențiat influența conceptelor generice care stimulează studentul să gândească strategic și să învețe prin experiențele sale.

Îndeplinirea acestui obiectiv s-a realizat într-o pondere majoră pe baza studierii literaturii de specialitate și dezbaterii teoriilor în domeniu. Mai mult decât oricând, universitățile se confruntă cu o mare provocare în ceea ce privește cerințele studenților lor, care trebuie să se adapteze mediului înconjurător. Marea problemă este că universitățile trebuie să fie capabile să pregătească studenții pentru joburi foarte diferite decât cele tradiționale și, de asemenea, pentru locuri de muncă care sunt încă necunoscute, dar care vor apărea pe piața muncii în orice moment. Astfel, procesul de predare ar trebui să se schimbe pentru a răspunde acestor fenomene.

În acest moment, credem că metodele clasice de predare și învățare care constau în transferul de cunoștințe de bază sunt depășite și insuficiente sau incomplete. Îmbunătățirea pe care o sugerăm este să schimbăm accentul de la învățarea simplă a cunoștințelor la dezvoltarea abilităților de gândire care să permită absolvenților să gândească și să acționeze într-o manieră strategică. Gândirea și acțiunea ar trebui să cuprindă o nouă dinamică bazată pe întregul spectru al cunoașterii care cuprinde câmpurile de cunoștințe raționale, emoționale și spirituale. Abilitățile generice, cunoscute și sub denumirea de competențe de bază, abilități cheie, abilități esențiale, abilități de bază, competențe soft, competențe-cheie sau abilități de

angajare sunt acele capacități care sunt susceptibile de a dezvolta dezvoltarea personală și profesională bazată pe învățare.

În final, concluzia cercetării este că dificultatea implementării unei noi viziuni privind abilitățile generice în universități nu este în mare parte din partea profesorilor, ci din partea studenților care ar trebui să se străduiască să-și dezvolte abilitățile conceptuale și capacitatea de a învăța să învețe într-un mediu de afaceri schimbător. Învățarea de a învăța devine noua mantra a învățământului universitar, astfel încât elevii să-și dezvolte capacitatea de a căuta noi cunoștințe în loc să le achiziționeze deja prelucrate prin prelegeri explicite. Acest lucru înseamnă că elevii își asumă responsabilitatea pentru învățarea lor și dezvoltarea abilităților generice ca mecanisme capabile să facă față unor probleme noi într-o lume schimbătoare.

(3) Evaluarea competențelor antreprenoriale necesare studenților în economia cunoștințelor în România.

Considerăm că acest obiectiv a fost îndeplinit prin realizarea și publicarea lucrării cu titlul: *Assessing Students' Entrepreneurial Skills Needed in the Knowledge Economy*, în cadrul revistei *Management & Marketing. Challenges for the Knowledge Society*.

Îndeplinirea celui de al treilea obiectiv a avut la bază o cercetare cantitativă bazată pe aplicarea unui chestionar, procesarea datelor și interpretarea rezultatelor din punct de vedere statistic. Vom prezenta sintetic dinamica cercetării și rezultatele obținute.

În vederea îndeplinirii acestui obiectiv am explorat modul în care studenții dobândesc abilitățile antreprenoriale solicitate de economia bazată pe cunoștințe, într-o țară cu o economie emergentă. Economia cunoștințelor se bazează în principal pe prelucrarea resurselor intangibile, care necesită abilități diferite ale lucrătorilor cu cunoștințe decât abilitățile lucrătorilor industriali. Economia cunoștințelor se dezvoltă rapid, inclusiv în țări cu economii emergente precum România. Universitățile trebuie să se adapteze la cerințele impuse de economia cunoștințelor și să adopte schimbarea proceselor lor de predare bazate pe transferul de cunoștințe pentru dezvoltarea abilităților studenților care le vor permite să se desfășoare într-un mediu de afaceri turbulent. Cercetarea se concentrează asupra abilităților antreprenoriale și prezintă o evaluare a abilităților antreprenoriale ale studenților într-o universitate românească. Setul de competențe antreprenoriale luate în considerare în această lucrare a fost selectat pe baza literaturii, și se așteaptă ca acestea să definească comportamentul antreprenorial până în orizontul de timp 2030. Au fost luate în considerare următoarele competențe: rezolvarea complexă a problemelor, gândirea critică, gândirea creativă, învățarea activă, judecata și luarea deciziilor. Pentru cercetarea cantitativă am dezvoltat și am aplicat un chestionar pentru a evalua nivelul acestor abilități pentru studenți la Universitatea "Ștefan cel Mare" din Suceava, România. Am procesat setul de date obținut utilizând pachetul software specializat SPSS, versiunea 25, și am aplicat funcția statistică a Analiza Factorială Exploratorie (EFA) în scopul identificării factorilor principali influențând percepțiile lor asupra categoriilor de competențe investigate. Rezultatele Analizei Factoriale Exploratorie au relevat un set de 5 factori pe care i-am corelat în scopul validării ipotezei de cercetare. Rezultatele noastre arată că economia și educația pentru afaceri contribuie în mod esențial la dezvoltarea acestor abilități antreprenoriale.

În concluzie, am constatat că în procesul de adaptare, universitățile se concentrează asupra misiunii lor tradiționale de predare, învățare și cercetare. Astăzi, societatea cere mult mai mult de la universități în ceea ce privește contribuția lor. În acest context, universitățile ar trebui să contribuie mai mult la dezvoltarea de competențe generice ale studenților și pentru a-și stimula intenția față de antreprenariat, în special în țările cu economii emergente precum România. Limitele acestei cercetări sunt date de eșantionul investigat, care a fost localizat într-o anumită universitate de stat din România, prezentând astfel o perspectivă contextuală. Sondajul privind categoriile de vârf de competențe necesare pentru 2030 ar putea fi extins la nivel național dar cu o revizuire mai detaliată a construcției instrumentului de investigație (adică revizuirea chestionarului). De asemenea, ancheta ar trebui extinsă la mediul de afaceri pentru a obține viziunea diferitelor firme cu privire la abilitățile generice necesare în acest domeniu al economiei cunoștințelor în viitorul apropiat.

(4) Analizarea proceselor cheie de dinamica cunoștințelor și capitalului intelectual în cadrul organizației;

Considerăm că acest obiectiv a fost îndeplinit prin realizarea și prezentarea lucrării cu titlul: *The Key Processes of Knowledge Dynamics and Intellectual Capital in the Organization*, în cadrul conferinței internaționale Strategica –International Conference – Sixth Edition, ”Challenging the Status Quo in Management and Economics”.

Pentru îndeplinirea acestui obiectiv de cercetare, am abordat conceptual influența pe care o are dinamica cunoștințelor asupra capitalului intelectual la nivel organizațional. În primul rând, am prezentat perspective asupra complexității conceptului dinamicii cunoștințelor și explicăm de ce și cum trebuie să fie dinamica cunoștințelor abordată diferit pentru a obține performanțe individuale și organizaționale. Pentru o organizație are o importanță fundamentală formarea unei perspective clare asupra tipurilor de cunoștințele existente. Identificarea corectă a cunoștințelor în funcție de diverse criterii ajută la gestionarea eficientă și, prin urmare, contribuie la realizarea cu succes a obiectivelor organizatorice. În cadrul acestei lucrări, susținem că dinamica cunoștințelor reprezintă transferuri multiple prin diferite procese din care cele mai cunoscute sunt: socializarea, externalizarea, internalizarea, combinarea. Aceste procese sunt posibile datorită existenței a două forme de cunoștințe ca și tacite și explicite. Capitalul intelectual și dinamica cunoștințelor sunt dintre cele mai dezbătute concepte și evoluția globală oferă în permanență noi probleme de discuție datorită caracterului lor dinamic. Capitalul intelectual al unei organizații este o structură complexă, o componentă foarte dinamică și o sursă nesfârșită de inovație și dezvoltare, dacă este capitalizată corespunzător. Prin urmare, subliniem interdependențele dintre procesele de dinamica cunoștințelor și componentele capitalului intelectual în cadrul organizației. În cele din urmă, în cadrul acestei lucrări, am abordat în profunzime aspecte importante legate de influența proceselor de dinamica cunoștințelor și capitalului intelectual la nivel organizațional.

Valorificarea performantă a capitalului intelectual al unei organizații produce numeroase beneficii pentru aceasta și contribuie la o dezvoltare durabilă și sustenabilă în condițiile unui mediu de afaceri volatil, turbulent, și complex (VUCA). Într-un astfel de mediu organizația își poate asigura avantajul competitiv sustenabil prin intermediul competențelor fundamentale și a capabilităților dinamice pe care le creează și le dezvoltă având la bază, în special resurse

intangibile, astfel încât să implementeze strategii de succes care să fie dificil și costisitor de imitat de către competitorii din același grup strategic. (O'Dell & Hubert, 2011)

În concluzie, marea provocare pentru liderii de afaceri este de a descoperi ecuația magică care arată modul în care se mărește capitalul intelectual al organizației și se obțin astfel venituri mai mari. Înțelegerea dinamicii capitalului intelectual oferă perspective pentru manageri. În loc să privim managementul capitalului intelectual ca fiind controlul stocului de capital adică al resurselor ca cunoștințe codificate deținute de organizație în prezent, abordarea dinamică direcționează atenția spre gestionarea fluxurilor și a fluxurilor orientate spre viitor pentru facilitarea schimbului de cunoștințe, a învățării și a inovării. Mai exact, procesul de examinare subliniază faptul că managerii ar trebui să fie foarte conștienți de modul în care resursele intangibile influențează crearea de valoare și ce fel de sinergii există între diferite tipuri de resurse. Atunci când facem asocierea între capitalul intelectual și cunoștințe, diferența trebuie să se distingă în valoarea acestora pentru organizație. Cunoștințele generează în mod activ valoare, numai pe parcursul utilizării. Cu cât este mai puternică dinamica cunoștințelor cu atât este mai mare impactul asupra valorii capitalului intelectual. Cunoștințele creează valoare prin încorporarea lor în produsele companiei. Dinamica cunoștințelor influențează în mod semnificativ capacitatea companiei de a produce și livra produse economice valoroase pentru clienți. Încorporarea cunoștințelor în organizație va duce la rezultate valoroase, care nu numai că cuprind cunoașterea, dar și ele sunt rezultatul unor cunoștințe bine procesate anterior (Bejinaru & Prelipcean, 2017).

În plus, capitalul uman este o componentă fundamentală datorită potențialului său nesfârșit de inovare, precum și adaptarea impresionantă a acestuia la nevoile organizației. Capitalul uman poate fi reconstruit cu o viteză mai mare decât capitalul structural și decât cel relațional care au nevoie de mai mult timp pentru a ajunge la o proprietate convenabilă. Cu toate acestea, pentru ca capitalul uman să crească instantaneu de la o etapă la alta, sporind evoluția organizației, acolo trebuie să fie o dinamică a cunoștințelor (Bejinaru, 2011).

Încheiem prin a reaminti încă o dată cum capitalul intelectual al unei organizații este o structură complexă, o componentă foarte dinamică și o sursă de inovație nesfârșită și dezvoltare dacă este capitalizată corespunzător. Prin urmare, subliniem acest lucru abordând interdependențele proceselor dinamicii cunoștințelor și componentelor capitalului intelectual din cadrul organizației care reprezintă o mare oportunitate pentru îmbunătățirea utilizării resurselor organizaționale.

În contextul temei de cercetare am vizat factorii cei mai puternici în a influența dezvoltarea capitalului intelectual organizațional astfel încât organizația să prospere.

III. Concluzii și discuții

În concluzie, cunoștințele reprezintă cea mai bună variantă pentru îmbunătățirea strategiei organizaționale. În special pentru universitățile de cercetare, pentru a stimula cercetarea și explorarea cunoștințelor printr-un sistem bine definit de recompensare, care ar trebui conceput pentru a influența toate componentele capitalului intelectual (adică rațional, emoțional și spiritual). Dacă cunoașterea rațională este direct legată de cercetarea fundamentală a științei, cunoașterea emoțională este legată de cultura organizațională și de crearea un climat de

încredere și cooperare. Cunoștințele emoționale și cunoștințele spirituale contribuie la cultura care încurajează eforturile de cercetare și stimulează ideile noi în domeniul științei, tehnologiei și afacerilor. Din păcate, în multe universități, cultura organizațională se bazează pe ideea că cercetarea efectuată este obligatorie. Cu toate acestea, studiile teoretice și cercetarea experimentală au demonstrat că crearea de cunoștințe este strâns legată de inteligențele emoționale și spirituale, fapt care necesită un sistem complex de reformulare a tuturor contribuabililor de la profesori la studenți. Toate universitățile de clasă mondială sunt cunoscute pentru programele lor impresionante de cercetare și rezultatele publicate în revistele internaționale. "Există o dovadă amplă că universitățile, în special universitățile de cercetare sunt motoare de dezvoltare intelectuală și economică" (Victor, 2007, p. 55).

Acest program de cercetare a avut 4 obiective. În primul rând, identificarea principalelor competențe dobândite de studenții dintr-o universitate de stat din România prin intermediul aplicării algoritmului analizei factoriale. În al doilea rând, determinarea perspectivelor studenților asupra competențelor necesare pe piața forței de muncă în economia cunoștințelor în România. Al treilea obiectiv a fost de a realiza o evaluare a competențelor antreprenoriale necesare studenților în economia cunoștințelor în România. Obiectivul numărul patru, a fost: analizarea proceselor cheie de dinamica cunoștințelor și capitalului intelectual în cadrul organizației. Cele patru obiective au o conexiune logică și au contribuit la concretizarea cercetării de ansamblu a programului, cu tema "*Strategii pentru dezvoltarea economiei cunoștințelor în România*".

Concluziile de ansamblu asupra temei de cercetare reies din rezultatele prezentate pentru fiecare obiectiv îndeplinit al cercetării. Astfel, rezultatele analizei factoriale au arătat factorii care influențează cel mai mult perspectiva studenților asupra procesului de învățare oferit de profesorii din universitatea lor. Analizând componentele factorilor și valorile înregistrate de fiecare element - observăm că orientarea preferată a studenților în ceea ce privește procesele de predare și învățare se bazează pe atingerea competențelor de afaceri conform următoarelor argumente:

- studenții sunt motivați să devină profesioniști și manageri excelenți;
- studenții sunt conduși de ideea de succes și, astfel, recunosc rolul educației pentru capacitatea lor de a rezolva problemele complexe;
- studenții se conformează, dar nu sunt mulțumiți de stilul didactic care implică transmiterea obiectivelor de învățare, specificarea competențelor necesare pentru a fi dobândite la sfârșitul cursului și o evaluare care necesită aplicarea competențelor dobândite și nu numai recuperarea informații din memoria lor;
- studenții întâmpină dificultăți în a se angaja în activități de gândire creativă și de învățare datorită unui anumit nivel de nesiguranță pe care îl percep în această experiență;
- studenții demonstrează o acceptare scăzută a abilităților de învățare pentru a învăța, deoarece asociază acest tip de competențe cu un nivel superior de inteligență, de expertiză și cu mult mai multă diligență în numele lor;
- studenții preferă cel mai mic sistem de predare și învățare din sala de clasă prin care li se oferă informații și răspunsul așteptat din partea acestora ar trebui să reflecte doar capacitatea lor de stocare și de recuperare.

Rezultatele îndeplinirii celui de al doilea obiectiv au constat în evidențierea perspectivelor asupra percepției studenților români despre dezvoltarea abilităților generice și despre disponibilitatea lor de a-și asuma rolul ca principali actori în procesul de învățare. Considerăm aceste informații valoroase, deoarece reprezintă un punct de pornire pentru elaborarea oricărei strategii de îmbunătățire a curriculei sau educație.

În cazul obiectivului cu numărul trei, concluziile reliefează rolul universităților care se pregătesc să ofere studenților cele mai bune abilități. Acest demers este strâns legat de gândirea strategică și de dezvoltarea strategiilor bazate pe cunoștințe la nivel de rectorat al oricărei universități. Acest lucru va îmbunătăți contribuția universităților noastre la crearea unei valori economice și sociale și la creșterea rolului acestora în accelerarea procesului dezvoltare a economiei noastre. Aceasta este în concordanță cu viitoarele strategii ale Uniunii Europene și guvernamentale de consolidare a sistemului nostru educațional și a rolului acestuia în societate. În cele din urmă, furnizorii de educație și formare ar trebui să aibă viziunea viitorului lor ca un model dual cu sectorul de afaceri, pentru a rămâne în contact cu piața, pentru o mai bună satisfacere nevoile angajatorilor.

Cel de al patrulea obiectiv a condus la rezultate precum conștientizarea importanței majore pe care o are abordarea strategică a capitalului intelectual la nivelul organizațiilor. Astfel am argumentat că capitalul intelectual al unei organizații este o structură complexă, o componentă foarte dinamică și o sursă de inovație nesfârșită și dezvoltare dacă este capitalizată corespunzător. În concluzie, interdependența dintre procesele de dinamica cunoștințelor și componentele capitalului intelectual poate conduce la îmbunătățirea utilizării resurselor organizaționale, dacă sunt utilizate strategiile corespunzătoare.

În încheiere considerăm că scopul fundamental al acestui program de cercetare a fost îndeplinit, prin cercetările derulate în ceea ce privește opțiunile de strategii pentru dezvoltarea economiei cunoștințelor în România.

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Factorial Analysis Perspectives upon Students' Skills in the Knowledge Economy

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Abstract. *The main purpose of this research is to identify which is the necessary level of students' competencies according to the requirements of the knowledge-based economy. In this approach, we will highlight the influence of generic skills that stimulate the students to think strategically and learn through their experiences. Throughout the sections of the paper, we will highlight the facts and characteristics of the knowledge economy and the profile of the young generations of students who are going to be the future players whether as managers or as employees. The quantitative part of the research was realized throughout the administration of a 30 items questionnaire which was addressed to both undergraduates and graduates, enrolled in management and business study programs from "Ștefan cel Mare" University of Suceava, Romania. The database with the results was processed using a statistical software - SPSS, v.19. In order to reveal more insightful correlations about the respondents' opinions, we processed a Factorial Analysis for Principal Components. This analysis shows the most significant factors which influence the students' learning behavior and options during the educational process. We consider that the results of such a survey should be of interest for the university governance in order to increase the generated intellectual capital by improving the students' generic skills.*

Keywords: *generic skills; knowledge economy; learning to learn; problem solving; strategic thinking.*

Introduction

The necessity of this study stems from the fact that traditional teaching and learning has become insufficient for today's dynamic environment. In this sense, we will pinpoint the emerging opportunities in order to develop those competencies of knowledge-based economy students. More than ever universities are facing a great challenge regarding the requirements of their students who must adapt to the fast-changing environment (Bejinaru, 2017a, b; Dima, 2014; Duderstadt, 2000; Wells, 2017). Instead of the well-known Newtonian linear thinking model, it is necessary to develop strategic thinking as a key skill in achieving a competitive advantage in this turbulent world (Bratianu & Vasilache, 2010; Bratianu & Vătămănescu, 2017; Spender, 2014). The big issue is that universities must be able to prepare students

for jobs very different from the traditional ones and also for jobs that are yet unknown but shall pop-up into the labor market at any moment. Thus, the teaching process should change in order to meet these phenomena (Felin & Powell, 2016; Nonaka, 1991; Nonaka & Takeuchi, 1995; Teece, 2009). In the same time, complex student skills could be developed during extra-curricular activities integrated in knowledge management strategies (Zbucea, Pînzaru, & Anghel, 2014).

At this point, we believe that the classic ways of teaching and learning which consist of the basic knowledge transfer are rather obsolete and not adapted. The improvement we suggest is to change the focus from simple learning of knowledge, by memorizing and reproducing information, to developing thinking skills which will enable graduates to think and act in a strategic manner – which will empower them for life. Certain thinking skills, which are developed as a student will grant the strategic thinking (Bratianu, 2015) in almost any field of interest, in any region of the globe, at any age or in whatever other conditions. Thinking and action should embrace new dynamics based on the whole spectrum of knowledge comprising rational, emotional, and spiritual knowledge fields and the organizational knowledge dynamics under the influence of the nonlinear integrators (Bratianu, 2013; Shattock, 2009; Stewart, 1999; Sveiby, 1997; Unger, 2015; Viedma & Cabrita, 2012; Watson, 2010; Wells, 2017).

In the knowledge-economy, generic skills are considered that category of competencies which ensures a high level of employability. Generic skills are also defined as core skills, key skills, essential skills, basic skills, soft skills, key competences, or employability skills and represent those capabilities which are the most adequate to stimulate personal and professional development based on learning (Bedwell, Fiore, & Salas, 2014; Goatman & Medway, 2011; Singh & Gera, 2015). A critical problem for the implementation of a fresh vision by prioritizing generic skills in universities is the double-ground perspective, involving both professors and students. At this point, the students' motivation and behavior accounts for the most in order for such strategy to succeed. Students must acknowledge the necessity of developing generic skills, as creative thinking or learning to learn in a dynamic business environment. In order to habilitate themselves to face the world challenges, they should become more diligent and assume a greater responsibility for achieving such generic skills by themselves not only through information presented at courses and lectures at the university (Chan, 2010; Rahman, Mokhtar, Yasin, & Hamzah, 2011).

Students' skills in the knowledge economy

The effects of globalization are the most powerful and fastest in the business world. In this respect, the managers of multinational companies have resorted to developing and implementing emerging strategies based on the main resource which is generically accepted as knowledge. In this new knowledge economy (Hadad, 2017) it becomes obvious that the solution is to focus on creating knowledge strategies and to integrate them into the corporate strategies (Bolisani & Bratianu, 2017; Bratianu & Bolisani, 2015; Kotter, 2012; Nonaka & Zhu, 2012; Spender, 2014).

Against this globally dynamic background, universities face a continuing challenge of adapting the teaching process of their students. Traditional teaching and learning methods based mostly on information transfer and accumulation do no longer respond effectively to new standards in the knowledge economy and knowledge society. This mismatch occurs because of the acceleration of life rhythm in all areas and thus the lifetime of a piece of information is shortened and a continuous updating is required. At this stage of evolution, the problem consists in transferring the concentration of efforts towards the development of generic skills of students and implement learning by doing (Dawe, 2002; Gibb, 2004).

The core competencies, basic competences or key competences that we refer to when speaking about the capabilities of a student/graduate of a profession are in fact *the generic skills* that contribute to the process of learning of the individual, facilitating personal and professional development. The development of these generic competencies is more difficult to achieve from the students' perspective than from the teachers' perspective. The major obstacle is imposed by the students who do not want to make an intellectual effort to learn how to learn topical issues and thus updating themselves their knowledge about the changing environment, but prefer to receive the processed information, being necessary only memorizing it and further retrieving it when they are evaluated (Bratianu & Vătămănescu, 2017). Learning to learn becomes a new challenge for the academic environment so that students develop their ability to learn how to discover new knowledge themselves and not only rely on the systematized information presented to courses and seminars. Developing this category of *generic skills* involves the students' responsibility and the major advantage lies in the fact that they will be able to find solutions to the various problems they will face in the future and which are now unknown (Gibbons-Wood & Lange, 2000). That means also to develop a new university culture based on organizational learning (Bratianu, Agapie, Orzea, & Agoston, 2011; Ghinea & Bratianu, 2012).

On a medium to long term perspective, generic skills facilitate the employment of graduates and increase their learning capacity which is considered the main feature for developing personal mastery in the turbulent environment faced by learning organizations (Chan, 2010; Senge, 1999; Senge, Scharmer, Jaworski, & Flowers, 2004; Sin, Taveres, & Amaral, 2016; Singh, Thambusamy, & Ramly, 2014). Senge (1999, p.8) explains how and why generic skills are greatly contributing to identifying "connections between personal learning and organizational learning". In this sense, comparing the two perspectives, of business schools and business practice we can observe that little alignment is achieved. Though the business environment requires better generic skills and faster knowledge creation, the business schools are adapting their curricula too slowly to these new facts. "Only a few soft skills are explicitly addressed in the business schools' curricula, while other are omitted or ignored" (Massaro, Bardy, & Garlatti, 2016, pp.236-237). Day by day, the soft skills category is enlarging by new entries such as the ability to collaborate, work in groups, read social cues, and respond adaptively (Davies, Fidler, & Gorbis, 2011).

Considering these premises, the main objective of the present paper is to analyze students' perceptions regarding the teaching and learning models and the transition from the basic system of acquiring knowledge as a quantitative approach to a system of learning how to think, namely to develop generic abilities for business, such as: collecting data and information, problem solving, creative thinking, learning to learn and strategic thinking. A transformation at this level within universities is possible only throughout the strategic vision of academic leadership (Bratianu, 2013). As knowledge-intensive organizations, universities have the necessary resources and, in this sense, they must implement more knowledge strategies and practice for the inside framework.

Generic skills developed by universities in the knowledge economy

In this dynamic context, employers became very demanding and this phenomenon pushes greatly the mission of the university (Prelipcean & Bejinaru, 2016). According to the global barometer which is represented by the specialized community reunited every year at World Economic Forum in Davos the top ten skills for 2020 are significantly different from the previous ranking in 2015. Connecting the dots, we can assume that the most wanted skill in the labor market, which is '*complex problem solving*' can be obtained mainly throughout academic education and research. This target is to be achieved by universities throughout revolutionizing both their learning agenda and teaching system. The development of such generic skills like '*complex problem solving*' may result by integrating efforts of students and university professors alike (Bereiter, 2002; Faherty, 2015; Gvaramadze, 2011; Jackson, Sibson, & Riebe, 2014; Maritz, Jones, & Schwetzer, 2015; Mintzberg, 2004; Whitefield & Kloot, 2006).

"The knowledge-based economy has opened many market opportunities and universities have been prompt in approaching them. Specialized knowledge is often no longer simply shared free of charge, but turned into a profit opportunity" (Bejinaru, 2017a, p.252). Universities obtain multiple benefits when improving their system: first they increase the performance level of their undergraduates and graduates and thus on the long run they will remain an option for future candidates, second they raise the quality of their research and thus they attract funds, investors, and clients from the business sector, third they grow their prestige and thus climb-up in global rankings. Consequently, there is no doubt that universities are interested in bettering their system both for prestige and more financial earnings (Bejinaru, 2016).

Universities came to understand that their 'products' are top of the global list and at this very moment undergo a real struggle. This aims at leaving behind the obsolete structure of the traditional teaching school and launch on the market a dynamic organization. The education sector is gaining customers from several areas: business companies that want to buy innovations, licenses, know-how, and databases; public and private organizations which need to employ specialized workforce; people who want to study and obtain an academic degree.

Today universities act as a real entrepreneur does – meaning to adapt to the market fluctuations, to the clients' needs and to provide to the global trends and necessities. This context is very advantageous for universities as their main resource is knowledge, their processes focus on knowledge transfer and creation, their products (undergraduates and graduates, Ph.D. students and researchers) represent the human capital and reflect a certain level of knowledge and so at this point universities have all prerequisite to growing. However, under these promising conditions, the competition in the academic area becomes fiercer.

in 2020	in 2015
1. Complex Problem Solving	1. Complex Problem Solving
2. Critical Thinking	2. Coordinating with Others
3. Creativity	3. People Management
4. People Management	4. Critical Thinking
5. Coordinating with Others	5. Negotiation
6. Emotional Intelligence	6. Quality Control
7. Judgment and Decision Making	7. Service Orientation
8. Service Orientation	8. Judgment and Decision Making
9. Negotiation	9. Active Listening
10. Cognitive Flexibility	10. Creativity

Figure 1. Comparative Top Ten Generic Skills

Categories of generic skills

As we previously mentioned when speaking about the requirements of the knowledge economy, the number of generic skills is growing and changing at the same time. Even if they are subjected to global changes in all domains and thus there are great differences every five years, at least, their significance remains the same. The 'generic skills' represent a certain category that may be certainly applied by different individuals, in different contexts but in similar ways. This type of skills may be learnt from other individuals while they are using them in practice (Curtis, 2004). Generic skills are especially important for students' future career because they are considered the most useful in terms of increasing their chances of getting employed for the appropriate job, in the field of their education, motivation and personality traits (Hande, Mohammed, & Komatil, 2015; Vainikainen, Hautamaki, Hotulainen, & Kupiainen, 2015).

The European Union, throughout its offices, engages efforts throughout research studies for identifying which are the employability necessities of companies in terms of core skills in order to introduce their development into the curricula of universities and thus to provide competent students' for the labor market. Further, we shall present a brief argumentation of the top 10 skills for 2020, from Figure 1. This rank was established by World Economic Forum in Davos – 2016 (Curtin, 2004; Curtis, 2004; Rodzalan & Saat, 2012; Ulger, 2016).

Putting together the main literature and business trends we further argue the significance of 5 categories of skills to be achieved by students for increasing their employability changes in the future. In this sense, we want to emphasize also their role in the development of our research.

For any career field, *complex-problem solving* represents a key skill that employers search to discover in their job candidates. It represents a major selection criterion as many blue-collar positions, administrative and managerial positions require such abilities of complex-problem solving on a daily basis. It is considered a soft skill which combines the basic abilities acquired through education and learning with the ability of creative and efficient thinking for solving problems acquired throughout the practical experience. As this is the most wanted skill that employers need from their future employees they inquire about the following issues during interviews: the capacity to analyze and frame the causes of the given problem, the creativity to generate several solutions which will lead to achieve the final goal, the capacity to decide for the final solution, the ability of implementing a complete plan and also the capacity of assessing the effectiveness of the implemented solution (Curtis, 2004; Dawe, 2004).

Critical thinking skills – are available for anyone who practices. Critical thinking represents a superior level which needs exercise in order to be developed. It functions like exercising a sport or playing an instrument, the more you practice and the better you comply with the rules, the better you become. It is important to acknowledge that improvement of critical thinking is not possible without conscious commitment to learning. At the work-place, critical thinking is useful for evaluating particular issues in a certain context. It represents something different from gathering of facts and knowledge which can be learnt once and then used in the same form in many other occasions, like the nine times table which we memorize in early school. This type of skills is important for employers because a person that is good at critical thinking is easily achieving the followings tasks: identify and understand the connections between certain ideas; acknowledges the role and relevance of arguments; identifies, builds and evaluates arguments; sights mismatches and errors of reasoning; approaches issues in a systematic and consistent manner; reflects upon their own hypothesis, believes and values. The role of critical thinking is to judge issues in a specific way in order to achieve the best possible option in a context known by the decision-maker (Curtis, 2004; Dawe, 2004).

Creativity – is defined today as a synergetic result of thinking and producing. To be creative means not only to generate new ideas, in this case, you are imaginative but also to produce added value out of your creative thinking. Creativity skills are needed in order to obtain new solutions for new problems in a changing and turbulent business environment. As the context and the factors are changing, the same happens with issues and barriers that must be overcome. In order to be creative one must be committed to his/her work and also passionate. To be creative means to bring something new into being. Creativity must not be regarded as a burden but as a means of benefiting from all opportunities that the avalanche of new products, new technologies, and new processes is bringing (Curtis, 2004; Dawe, 2004).

Searching, collecting and organizing data, information and knowledge represents a category of skills which is related to digital literacy and are basic necessities for students as they enable the students to prepare for the tasks of their future jobs in terms of understanding the issues and contexts they deal with (Curtis, 2004; Dawe, 2004). The internet and the digital revolution could generate added value to educational processes (Pînzaru, Zbucea, & Anghel, 2014).

Learning to learn represents a very important skill that ensures adaptability for the long term which allows students to renew their knowledge and information in accordance with the latest requirements of the continuously changing environments. The ability to learn to learn provides great benefits for the development of individuals, groups, and organizations. "This competence includes awareness of one's learning process and needs, identifying available opportunities, and the ability to overcome obstacles in order to learn successfully" according to the Recommendation of the European Parliament (2006, p.16). Regarding the long-term vision of education at European Union's level and at the global level, strategies are yet to be discussed taking into consideration prospects of 'future key skills' (Davies et. al, 2011).

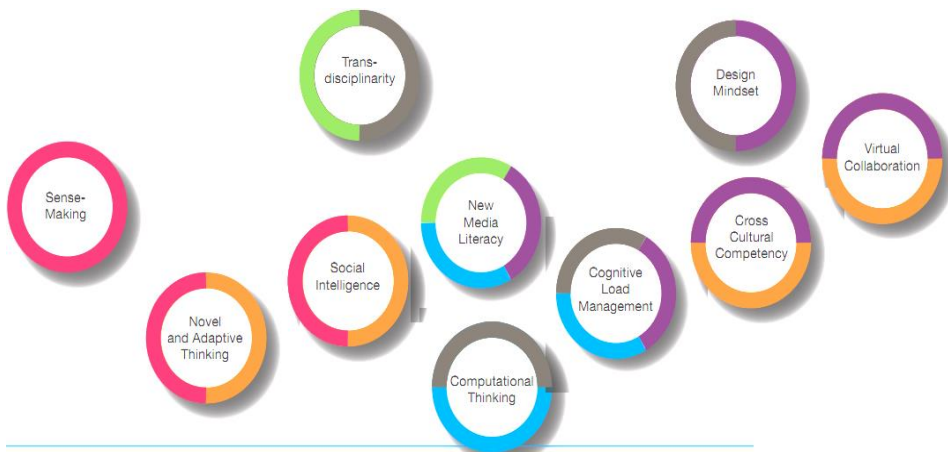


Figure 2. Key future skills (Davies et al., 2011)

Research methodology

This paper presents a research comprising a qualitative approach, throughout the literature review and a quantitative approach throughout the statistical analysis. For the investigated issue we developed the research throughout administrating a questionnaire of 30 items with response options on a Likert scale from level 1, the lowest to level 5, the highest. The items for the questionnaire were formulated in such a way as to reflect the students' interest and development potential in relation to the competences that will be required in the future and which we have presented in the previous sections. We were interested to picture their view regarding each of

the 5 competencies fields: collecting and organizing information, problem solving, creative thinking, learning to learn and strategic thinking. Overall, the research question is "What skills are they more interested in?". In this order, the hypotheses of the research which follow to be tested are:

H1: Students consider 'collecting data and information' a priority generic skill.

H2: Students consider 'problem solving' a priority generic skill.

H3: Students consider 'creative thinking' a priority generic skill.

H4: Students consider 'learning to learn' a priority generic skill.

H5: Students consider 'strategic thinking' a priority generic skill.

Our mission is that in the analyzed collectivity of undergraduates and graduates to obtain an integrative image of their perception regarding the importance and the role of developing generic skills and of their openness for such a teaching and learning approach. As a research tool, we used a 30-items questionnaire, which we distributed to undergraduates and graduates enrolled in the Faculty of Economics and Public Administration from "Stefan cel Mare" The University of Suceava, in Romania during the second semester period. In order to have more insights into their preferences, we have performed several steps of statistical analysis. Of course, the hierarchy of the factors shows their responsiveness to the investigated issue and thus the top values indicate their preferences but the lowest values reveal the skills they are not fond of.

The questionnaire was addressed to the students in the Faculty of Economics and Public Administration and we received feedback from 123 students, both undergraduates and graduates, enrolled in management and business study programs from USV. The questionnaire was built and transmitted to be answered throughout the Google platform – Event Feedback. All valid questionnaires were processed using SPSS, version 19. Additionally, a factorial analysis was performed, with a view to extracting the most important factors which are involved in developing students' skills in university programs (Arkkelin, 2014). Identifying and understanding the compositions and sources of these factors enables us to propose some options of improving the existing level of knowledge competencies and thus improve the curricula and furthermore the potential of the students as human capital within the knowledge economy.

Statistical tests and factorial analysis

In order to comply with the statistical methodology, we first assessed the accuracy of the method and employed the Bartlett and Kaiser-Meyer-Olkin (KMO) tests (Table 1). According to the values obtained from these tests, we have the validation for applying the factor analysis method onto the collected data. The value of KMO is .840 -which indicates a very good adequacy of the selected method. A value below 0,7 of the KMO test would have questioned the adequacy of the method. Both the Bartlett test and the KMO test show an excellent accuracy for using the factor analysis for the present research.

Table 1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.840
Bartlett's Test of Sphericity	Approx. Chi-Square	1793.155
	df	435
	Sig.	.000

For the factorial analysis, we selected the option of principal components analysis as a first step. The rotation option of principal components analysis is more advantageous because it maximizes the variance of the factors components and leads to smaller loadings of variables for each factor. The fundamental principle of this method is to extract the smallest number components that represent as much as possible from the total information contained in the original data, these new components expressing new attributes of individuals and built so that they are uncorrelated, each of these new variables being a linear combination of original variables. We have to specify that using the principal components analysis eliminates data redundancy (Arkkelin, 2014). The final output makes the interpretation of the factors more pertinent. Following this protocol, we obtained in the first rotation 8 factors explaining 66.572 % of the responses enclosed in the original database (Table 2).

For this type of analysis, a factor represents a latent variable which should be named and referenced according to the information embedded. The load structure of a factor may provide suggestions in this regard. Loading values greater than 0.6 are considered important, those below 0.4 are considered low. Higher load variables are the combination of the initial variables that determine the factor, so are the most relevant in deciding the name of the factor. Considering this general condition, we were allowed to further process the second rotation with an established number of factors in order to converge to the initial hypothesis of our research.

In this case, we can observe the loadings of factors' components in Table 3 and apply the presented rules we shall propose the factors titles considering primarily the components with the highest loadings. We shall further present in Table 4 the structure and names of the 5 factors.

Table 2. Total variance explained

Factor	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	10.082	33.606	33.606
2	1.938	6.459	40.064
3	1.624	5.413	45.477
4	1.481	4.938	50.415
5	1.377	4.588	55.004
6	1.205	4.015	59.019
7	1.185	3.950	62.970
<u>8</u>	<u>1.081</u>	<u>3.603</u>	<u>66.572</u>
9	.919	3.063	69.635
10	.876	2.921	72.556
11	.777	2.589	75.146
12	.744	2.479	77.625
13	.700	2.333	79.958
14	.644	2.148	82.106
15	.622	2.073	84.179
16	.566	1.887	86.066
17	.497	1.656	87.722
18	.463	1.544	89.266
19	.414	1.381	90.646
20	.382	1.274	91.921
21	.370	1.234	93.154
22	.359	1.196	94.351
23	.298	.993	95.344
24	.288	.961	96.304
25	.250	.833	97.137
26	.227	.756	97.893
27	.208	.695	98.588
28	.159	.531	99.119
29	.150	.501	99.620
30	.114	.380	100.000

Table 3. Rotated Factor Matrix^a

	Factor				
	1	2	3	4	5
Q 10	.660				
Q 18	.582				
Q 05	.577				
Q 30	.547				
Q 27	.544				
Q 28	.498				
Q 11	.496				
Q 24	.487				
Q 25	.483				
Q 19	.404				
Q 12	.403				
Q 23	.393				
Q 14	.375				
Q 13		.760			
Q 15		.712			
Q 29		.545			
Q 20		.480			
Q 17		.439			
Q 03		.336			
Q 06			.852		
Q 16			.668		
Q 04			.502		
Q 02			.427		
Q 21			.420		
Q 09				.713	
Q 22				.496	
Q 07				.468	
Q 08				.386	
Q 01					.506
Q 26					.401
Extraction Method: Principal Axis Factoring.					
Rotation Method: Varimax with Kaiser Normalization.					
a. Rotation converged in 7 iterations.					

Concluding upon the factor analysis results and conditions we further present the descriptive statistics and consistency tests for the 5 factors. Once more we state that we decided on the factors components according to their loading values, meaning in a descending order. The first four variables enclosed in Factor 1 have the highest loading values and thus are the most representative for the investigated category of students' skills. We applied this rule for all the factors and so for factor 1 we have the following 4 items: Q 10=.660; Q 18=.582; Q 05=.577; and Q 30=.547. For factor 2, we include: Q 13=.760; Q 15=.712; Q 29=.545; Q 20=.480. Items comprised in factor 3 are: Q 06=.852; Q 16=.668; Q 04=.502; Q 02=.427. In the formation of factor 4 we

have items: Q 09= .713; Q 22= .496; Q 07= .468; Q 08= .386. For factor 5 the matrix retrieved only two items: Q 01= .506; and Q 26= .401. The structures of these factors must be tested in order to validate the consistency.

Table 4. Reliability statistics of factors

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Factor 1	.740	.745	4
Factor 2	.758	.770	4
Factor 3	.803	.803	4
Factor 4	.706	.708	4
Factor 5	.468	.468	2

Starting with Factor 1 we performed the internal consistency test, in order to test the reliability of all variables comprised in each factor. As a general rule, values higher than 0.7 prove a very good internal reliability or consistency. The Cronbach alpha coefficient test performed for Factor 1 retrieved a value of .740 which confirms that these 4 variables have the most influence on students' perspective regarding the competencies of strategic thinking.

Looking at the Mean values (Table 4, below) of the descriptive statistics for variables present in factor 1 – strategic thinking, we obtain an average mean with the highest value $M=4.59$ which confirms that the respondents recognize the importance of this category of skills and are interested in developing their strategic thinking during their higher education cycles I and II. This high value of the Mean could also suggest the fact that students acknowledge the role of strategic thinking for their future professional activity and this thinking pattern influenced them in responding to the questionnaire. In this sense, it is obvious that they have expectancies from their professors in order to help them develop their strategic thinking skills according to the educational curricula.

Table 5. Descriptive statistics for Factor 1: Strategic thinking

Item	Variables	Value	Mean	Std deviation
Q 10.	Vision is important for business development.	.660	4.6341	.68075
Q 18.	Long-term thinking is essential in business.	.582	4.6016	.70988
Q 05.	We see future as a sequence of probable events.	.577	4.6829	.59115
Q 30.	The strategy is the path for achieving a long-term goal.	.547	4.4634	.78189

The four variables enclosed in Factor 2 have the highest loading values and thus are the most representative for the investigated category of students' skills. The Cronbach alpha coefficient test performed for Factor 2 retrieved a value of .758 (Table 5, above) which confirms that these 4 variables have the most influence upon students' perspective regarding the skills of learning to learn.

The value of the Mean for factor 2 is $M=3.69$ which is the lowest from all Mean values of the 5 factors. According to the average mean value, we can understand that these issues regarding the skills of learning to learn have been rated lower on the Likert scale by a majority of respondents but obviously not with the lowest (1). This might be interpreted as a hesitant behavior – due to the fact that graduates and undergraduates perceive the skills of ‘learning to learn’ as a higher level which implies more hard work, more responsibility and more diligence on their part. As we can observe in the composition of factor 2 (in Table 6) respondents agree more to the idea that ‘Q15. Learning must continue after graduation’ due to the fact that they still feel vulnerable and consider that they should learn more in the future. The other three items which address the superiority of the learning process and the mental and spiritual effort necessary for the learning process were rated lower.

Table 6. Descriptive statistics for Factor 2: Learning to learn

Item	Variables	Value	Mean	Std deviation
Q 13.	Learning is a more complex than memorizing.	.760	3.2927	1.45834
Q 15.	Learning must continue after graduation.	.712	4.0569	.95214
Q 29.	In faculty we must learn how to learn.	.545	3.6911	1.22895
Q 20.	Learning must have a good motivation.	.480	3.7317	1.33719

The four variables enclosed in Factor 3 have the highest loading values and thus are the most representative for the investigated category of students’ skills. The Cronbach alpha coefficient test performed for Factor 3 retrieved a value of .803 which confirms even a better consistency of these 4 variables which have the most influence upon students’ perspective regarding the skills of creative thinking. Factor 3, designated as ‘Creative thinking’ has registered the second lowest Mean value $M=3.97$ from all factors. These statistical measures show that students have a problem with this category of skills whether they don’t enjoy being creative, whether they don’t know how to do it or maybe they consider the creative thinking approach too risky. The skills of ‘creative thinking’ are very important to be developed and encouraged during academic education because they will later generate competitive advantage for the organizations in the business environment.

Table 7. Descriptive statistics for Factor 3: Creative thinking

Item	Variables	Value	Mean	Std deviation
Q 06.	I like to have different ideas than others.	.852	3.5772	1.33065
Q 16.	New problems need new solutions.	.668	3.7073	1.26576
Q 04.	Any student can develop a creative thinking.	.502	4.3496	.92314
Q 02.	Creativity can rise both from failure and success.	.427	4.2602	.92184

The four variables enclosed in Factor 4 have the highest loading values and thus are the most representative for the investigated category of students' skills. The Cronbach alpha coefficient test performed for Factor 4 retrieved a value of .706 which confirms an average level of consistency of these 4 variables which have the most influence upon students' perspective regarding the skills of problem solving. When focusing on factor 4 - 'problem solving', the items which reflect this dimension have the highest mean value $M=4.33$. This reveals another thinking pattern of the respondents which tends towards pragmatism - and real problem solving.

Table 8. Descriptive statistics for Factor 4: Problem solving

Item	Variables	Value	Mean	Std deviation
Q 09.	Solving problems is learnt through practice.	.713	4.3577	.97619
Q 22.	A problem may have many solutions.	.496	4.4065	.90388
Q 07.	Learning methods of solving problems is more important than memorizing a big volume of information.	.468	4.1707	.97264
Q 08.	A problem reflects a difference between what we want and what we have.	.386	4.4065	.78758

The four variables enclosed in Factor 5 have good loading values and thus are representative for the investigated category of students' skills. The Cronbach alpha coefficient test performed for Factor 5 retrieved a value of .468 which is a quite low level of consistency of these 2 variables which represents the skills of 'collecting and organizing information'. At this point, we consider that the respondents had some difficulties in understanding the real meaning of the questions referring to the processes of collecting and organizing their data and information. At their education level, undergraduates and graduates tend to relate common questions to much more complex contexts. The composition of this factor shows that respondents had very heterogeneous options regarding the importance of the issues related to 'collecting and organizing information'. With respect to factor 5, the analysis of the descriptive statistics shows that the items referring to the process of collecting and organizing information, (i.e., Q01 and Q26) have an average mean of ($M=4.28$) which is the second highest value and indicates that the respondents rely on academic professors to provide relevant information at their courses and teaching activities. Regarding the activities of collecting and organizing information the questioned students were not so enthusiastic to do this kind of work by themselves and as previously mentioned prefer the support of a coordinator.

Table 9. Descriptive statistics for Factor 5: Collecting and organizing information

Item	Variables	Value	Mean	Std deviation
Q 01.	I prefer to summarize myself the courses for studying.	.506	4.2927	.96438
Q 26.	In business is better to gather yourself the data about the market.	.401	4.2683	.98408

Discussion of statistical research results

To conclude with, we will synthesize the main goal of the research, the methods used and the results obtained in order to validate the research hypothesis. The purpose of the research has been achieved as we presented and argued the students' preferences regarding the investigated categories of skills. We consider that the hierarchy of the factors obtained as a result of the statistical processing and analysis represents the validation of the previously stated hypothesis:

- H1: Students consider 'collecting data and information' a priority generic skill, was validated by the formation of factor 5 (M=4.28);
- H2: Students consider 'problem solving' a priority generic skill, was validated by the formation of factor 4 (M=4.33);
- H3: Students consider 'creative thinking' a priority generic skill, was validated by the formation of factor 3 (M=3.97);
- H4: Students consider 'learning to learn' a priority generic skill, was validated by the formation of factor 2 (M=3.69);
- H5: Students consider 'strategic thinking' a priority generic skill, was validated by the formation of factor 1 (M=4.59).

The interesting fact, but rewarding, is that we initiated the research with equivalent hypotheses statements for the five areas of generic skills and at the end we obtained a validation ranking throughout the statistical analysis of students' responses. Of course, the hierarchy of the factors shows the students responsiveness to the investigated issue and thus the top values indicate their preferences and the lowest values reveal the skills they appreciate the least.

The results of the factorial analysis show the factors that most influence the students' perspective on the learning process provided by professors in their university. Analyzing the components of the factors and the values recorded by each item - we can notice that the students' preferred orientation regarding the teaching and learning processes is based on achieving business competencies because of the further arguments:

- students are motivated to become excellent professionals and managers;
- students are driven by achieving success and thus they acknowledge the role of education for their future ability to solve complex problems;
- students comply with but are not satisfied with the teaching style that implies the transmission of the learning objectives, the specification of competencies needed to be acquired at the end of the course and an evaluation requiring the application of acquired competencies and not only the retrieval of information from their memory;
- students are encounter difficulties to engage in creative thinking activities and learning due to a certain level of insecurity that they perceive towards this experience;
- students show a low acceptance of learning to learn skills as they associate this type of competencies to a higher level of intelligence, of expertise and considerably much more diligence on their behalf;
- students prefer the least classroom teaching and learning system through which information is delivered to them and the expected response from them should only reflect their storage and retrieval capacity.

Limits of the presented research may be considered the sample of students belonging to a single Romanian public university meaning that reflects a contextual perspective. However, the survey may be extended to the national level and international area also but after a calibration of the investigation instrument. The originality of the paper consists in the fact that provides insights into the perceptions of students when considering the options of learning generic skills as their acceptance of engaging with responsibility towards a new type of learning process.

Conclusions and perspectives

In conclusion, students are aware of what is important for them, they rate highly on strategic thinking and problem solving issues and afterwards, an average rating, on collecting and organizing information. These are the main skills which guarantee that they will become good businessmen, successful entrepreneurs or performant managers (Chan, 2010; Rahman et al., 2011; Senge et al., 2004; Sin et al., 2016). The half-down rated skills are creative thinking and learning to learn because are asking for more cognitive effort, given the time allocated to study, risks and uncertainty implied.

The usefulness of this research is that may be a starting point for changing the students' perspectives regarding the learning process in order to facilitate their skills acquiring and improvement. Also, it may be useful for Faculty leadership in order to adapt the teaching curricula and teaching methods in order to redirect the efforts of both teachers and students towards this type of skills which are greatly emphasized as critical for the new generation of employees and employers (Faherty, 2015; Jackson et al., 2014; Maritz et al., 2015). The current study provides a preliminary insight into the perception of students from a Romanian university about developing generic skills and into their readiness to assume the role of main actors in the learning process. We consider this information valuable as it represents a starting point for the elaboration of any curricula improvement or education strategy (Bedwell et al., 2014; Chan, 2010; Faherty, 2015; Hande et al., 2015; Massaro et al., 2016). Investigating the students' perceptions and their opinions we can better understand their needs and in this way, we can provide more satisfaction by offering more appropriate education services.

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Keywords (please give 3-5 keywords indicating subject of your proposed paper)

conceptual generic skills, core competences, knowledge management, learning and teaching

Abstract (copy the abstract of your proposed paper – 500 to 1000 words – indicating the aspects below)

a) purpose

The main purpose of this research is to identify the level of students' competencies according to the requirements of the knowledge-based economy. The necessity of this study stems from the fact that traditional teaching and learning has become insufficient for today's dynamic environment. In this sense, we will pinpoint the opportunities in order to develop those competencies of knowledge-based economy students. In this approach, we will highlight the influence of generic concepts that stimulate the student to think strategically and learn through their experiences.

b) design/methodology/approach

We developed the research throughout administrating a questionnaire of 30 items. The questionnaire was addressed to 300 students, both undergraduates and graduates, enrolled in management and business study programs from USV. 240 questionnaires were filled in and processed using SPSS, version 19. Additionally, a factorial analysis was performed, with a view to extract the most important factors which are involved in developing students' skills in university programs. Identifying and understanding the compositions and sources of these factors enables us to propose some options of improving the existing level of knowledge competencies and thus improve the curricula and further more the potential of the students as human capital within the knowledge economy.



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c) theoretical base

More than ever universities are facing a great challenge regarding the requirements of their students who must adapt to the fast going environment. The big issue is that universities must be able to prepare students for very different jobs than the traditional ones and also for jobs that are yet unknown but shall pop-up into the labour market at any moment. Thus the teaching process should change in order to meet these phenomena.

At this point we believe that the classic ways of teaching and learning which consist in the basic knowledge transfer are obsolete and insufficient or incomplete. The improvement we suggest is to change the focus from simple learning of knowledge to developing thinking skills which will enable graduates to think and act in a strategic manner.

Thinking and action should embrace new dynamics based on the whole spectrum of knowledge comprising rational, emotional, and spiritual knowledge fields.

Generic skills, also known as core skills, key skills, essential skills, basic skills, soft skills, key competences, or employability skills are those capabilities which are liable to power personal and professional development based on learning.

The difficulty of implementing a new vision concerning generic skills in universities comes mostly not from professors, but from students who should work harder in developing their conceptual skills and the capability of learning to learn in a changeable business environment. Learning to learn becomes the new mantra of university education, so that students develop their capacity of searching for new knowledge instead of acquiring it already processed through explicit lectures. This means that students assume responsibility for their learning and developing generic skills as mechanisms able to handle novel issues in a changeable world.

d) results or expected results

The obtained results show that most of the students from the undergraduate programs prefer the classical approach - less implication and responsibility in doing a harder conceptual work, while most students from the master programs are open to the new perspective of learning to learn, namely to developing generic skills.

e) originality/value

The current study provides a preliminary insight into the perception of Romanian students about developing generic skills and into their readiness to assume the role of main actors in the learning process. We consider this information valuable as it represents a starting point for the elaboration of any curricula improvement or education strategy.

f) practical implications

In the new turbulent business landscape, universities face a significant change in teaching their students. Although the research adds to the value of the extant literature on generic skills (also known as core skills), it is mainly focused on a Romanian sample, thus reflecting a context-based perspective.

Assessing students' entrepreneurial skills needed in the Knowledge Economy

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Abstract. *The purpose of this paper is to explore how students acquire entrepreneurial skills requested by a knowledge economy, in a country with an emergent economy. Knowledge economy is based dominantly on processing intangible resources, which needs different skills from the knowledge workers than from the industrial workers. Knowledge economy develops fast, including the countries with emergent economies like the Romania. Universities have to adapt to the requirements imposed by the knowledge economy and to change their teaching processes based on knowledge transfer into developing students' skills which will allow them to perform in a turbulent business environment. The paper focuses on the entrepreneurial skills and presents an evaluation of students' entrepreneurial skills in a Romanian university, students being enrolled in undergraduate and graduate programs of economics and business. The set of entrepreneurial skills considered in this paper have been selected based on literature, and they are expected to define the entrepreneurial behavior by the 2030 time horizon. The following skills have been considered: complex-problem solving, critical thinking, originality thinking, active learning, and judgement and decision making. For the quantitative research we developed and applied a questionnaire in order to assess the level of these skills for the students at "Stefan cel Mare" University in Suceava, Romania. We processed the obtained data set by using the specialized software package SPSS, version 25, and applied the statistical function of Exploratory Factor Analysis (EFA) for the purpose of identifying which are the main factors influencing their perceptions about the investigated categories of skills. The results of the Exploratory Factor Analysis revealed a set of 5 factors which we correlated to validate the research hypothesis. Our results show that economics and business education contributes essentially to the development of these entrepreneurial skills.*

Keywords: knowledge, knowledge economy, entrepreneurial skills, intellectual capital, economics and business education, emergent economy.

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Introduction

The knowledge economy represents that part of a country's economy in which intangible resources become more important than tangible ones in creating social value and the nation's wealth (Bejinaru, 2016; Davenport and Prusak, 2000; Hadad, 2017a, 2017b; O'Dell and Hubert, 2011; Powell and Snellman, 2004). The knowledge workers process intangible resources which are quite different than the tangible ones used extensively in the industrial economy. Since knowledge and intellectual capital is nonlinear in nature (Bratianu, 2010, 2018; Dombrowski et al., 2013; Nonaka and Takeuchi, 1995) thinking and decision making change the rules and new skills should be developed by the knowledge workers, managers and leaders (Bereiter, 2002; Bratianu and Vasilache, 2010; Drucker, 1993; Mintzberg,

2004). According to Bratianu and Vatamanescu (2017, p. 491), “Generic skills, also known as core skills, key skills, essential skills, basic skills, soft skills, key competences, or employability skills are those capabilities which are liable to power personal and professional development based on learning”. They are essential for increasing the chances of employability of the actual students and future knowledge workers in a turbulent business environment.

Entrepreneurial skills are part of these generic skills and they increase the students’ capacity of thinking critically in real business context, of making successful decisions and solving complex problems, of coming with new ideas in new situations demonstrating originality skills and openness to learn from both successes and failures (Bedwell et al., 2014; Curtin, 2004; Gibbons-Wood and Lange, 2000; Sin et al., 2016). The purpose of this paper is to discuss the importance of these generic skills for countries with emergent economies which strive to implement in an accelerate way knowledge economies, and to assess how students enrolled in economics and business undergraduate and graduate programs at the University “Stefan cel Mare” of Suceava develop their entrepreneurial skills needed in the future for such a knowledge economy. The next section of the paper is focused on a literature review, and then we will present the research methodology, results and discussions. The final section will present some conclusions and limitations of this research.

Literature review

Analyzing the entrepreneurial intent in transitional economies, with a focus on Romania, Shook and Bratianu (2010, p. 244) remark the importance of research in this domain of entrepreneurship and of developing the necessary skills for the students enrolled in economics and business programs: “Evidence has been offered that Romanian students may be intensely self-motivated and focused on their own abilities when deciding to be entrepreneurs. Thus, encouraging entrepreneurship in Romania entails simultaneously increasing the students’ perception of their abilities to successfully start a business, while not appearing to be overly supportive of their efforts to create a venture”. The results of this research converge with those found by Cantaragiu et al. (2014, p. 405): “As the role of education in society is being transformed, universities must adapt to the challenges imposed by the competitive world by teaching their students to think and act entrepreneurially in their professional lives”. A comprehensive approach to all these phenomena reveals the importance of the Bologna process, which generated a progressive convergence toward the European Higher Education Area (Bejinaru, 2017a; Dima, 2014).

In a changing world, with fast and unpredictable changes which lead to a turbulent business environment (Bolisani and Bratianu, 2017; Bratianu and Bolisani, 2015; Nonaka and Zhu, 2012; Spender, 2014), universities should not only to adapt to all these changes but to become driving forces for change and leaders in constructing new futures. Universities should develop strategies to increase their intellectual capital and to become learning organizations (Argote, 2013; Barath, 2015; Bratianu and Bejinaru, 2017; Örtenblad, 2015; Secundo et al., 2014; Senge, 1999; Zack, 1999). In the new economic landscape, universities enlarged their complex mission with the social component and become a part of the new triple helix university-government-industry, with new entrepreneurial features (Bejinaru and Prelipcean, 2017; Etzkowitz, 2013; Groves and

Paunescu, 2008). Universities of the 21st century should be able to become leaders of change and of innovation (Deca, 2015; Duderstadt, 2003).

Universities world-wide have the main role and the most power to develop the next generation of entrepreneurs by modelling their students throughout knowledge transfer and learning activities (Bejinaru, 2011). Formal entrepreneurial education already has a small history, as the first course on this subject was started in 1947 at the Harvard Business School (Volkman, 2004). Ever since entrepreneurial education has been continuously gaining interest at a global scale and has been also considered that entrepreneurship will become “the major academic discipline for business education in the 21st century” (Volkman, 2004). In the traditional view, the focus of universities was mainly to ensure that graduates will secure the prosperity of the society in different domains of activity. Recently the missions of educational institutions have shifted towards preparing students for competing in a dynamic global environment (Dima, 2014; Nesheim and Gressgard, 2014). They reflect a growing interest of scholars for the domain of the entrepreneurship in universities regarded either from economic point of view like innovations, patents, research grants, royalties and spin off companies or in a much broad perspective like community-academic engagement (Bejinaru, 2017b; Cantaragiu et al., 2014; Chan and Lo, 2007; Groves & Paunescu, 2008; Paunescu, 2013).

Universities have different approaches of their entrepreneurial education programs. There are study programs that approach this discipline more theoretically by developing more the research on entrepreneurship characteristics of success, entrepreneurship management models or leadership styles. In other situations, the study programs focus more on practical learning of entrepreneurship which consists in developing practical abilities like interpersonal skills, business planning, idea creation, negotiation skills (Donate and Canales, 2012). Although there are several ways of defining a *skill*, “its essence is that a skill stands for the capacity of performing a certain task or activity based on an integrated knowledge content, coming from direct experience and from a mediated learning process. It engenders the consideration of both tacit and explicit knowledge” (Bratianu and Vatamanescu, 2017, p. 493). For learning some simple skills we need only practice and observation, but for developing entrepreneurial skills people need to acquire both explicit and tacit knowledge from experts and to reflect upon the risks involved in business decision making (Dombrowski et al., 2013). Regarding *generic* and *transferable* skills, Curtis (2004b, p.141) posit: “a skill is regarded as generic if observers see a skill manifested by different people in many different contexts. It is transferable if an individual who demonstrates the skill in one context is able to apply it in others”. Entrepreneurial skills should be both generic and transferable.

In many countries there are ample research programs to identify and define the most important generic skills needed for the knowledge economy, such that universities to integrate in their curricula models and methods of developing them. For instance, in the United States, the report on The Secretary’s Commission on Achieving Necessary Skills (SCANS) and the 21st Century Workforce Commission established by Al Gore documented these skills, which can be described briefly as follows (Curtis, 2004a, p. 23): a) basic skills – literacy, numeracy, and communication; b) thinking skills – decision making, and problem solving; and c) personal qualities – responsibility, self-esteem, and integrity. In U.K., the Commission for Employment and Skills (UKCES, 2014) identified for the time horizon of 2020, the following generic skills: fluency of ideas, judgement and decision making,

originality, active learning, system evaluation, learning strategies, complex problem solving, critical thinking, system analysis, and deductive reasoning.

Extending the time horizon up to 2030, Dawe (2004) considers the following generic skills as becoming most important: *complex-problem solving, critical thinking, originality thinking, active learning, judgement and decision making*. In essence, the *complex-problem solving skills* represents that type of soft skills which mixes together the basic abilities acquired by formal education and learning with the abilities of creative and efficient thinking applied for solving problems acquired during practical experience. This category of skills is a priority for employers who seek blue-collar workers for administrative and managerial positions and while developing the employment interviews they inquire about issues like: the capacity to analyze and frame the causes of the given problem, the creativity to generate several solutions which will lead to achieve the final goal, the capacity to decide for the final solution, the ability of implementing a complete plan and also the capacity of assessing the effectiveness of the implemented solution (Bejinaru, 2018; Curtis, 2004a; Dawe, 2004).

Critical thinking represents a superior level of generic skills which needs a continuous exercise in order to be developed. It functions like learning a sport or playing an instrument, the more you practice and the better you comply with the rules, the better you become in using those skills. It is important to acknowledge that improvement of critical thinking is not possible without conscious commitment to learn (Moore and Parker, 2007). Critical thinking skills are useful in unique situations when a new problem occurs and must be evaluated and solved. The employees who master critical thinking are easily developing a series of tasks like: identification and understanding the connections between certain ideas; acknowledging the role and relevance of arguments; building and evaluating arguments; spotting mismatches and errors of reasoning; approaching issues in a systematic and consistent manner; reflecting upon their own hypotheses, beliefs and values. The role of critical thinking is to judge issues in a specific way in order to achieve the best possible option in a given context (Bejinaru, 2018; Curtis, 2004a; Dawe, 2004).

Originality skills may be considered also creativity skills, though there are slight differences between them. Basically, originality skills have a larger semantic domain than the creativity ones. To have creativity skills requires two levels of action. First, it means to come up with new ideas, which actually proves you are imaginative, and second to produce the new solution and thus to bring added value as a result of the creative thinking. Originality skills are necessary for generating new solutions for new challenging issues of the VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) business environment. Actually the difference reported to creativity is that *originality skills* enable a person to generate a different kind of ideas, unusual and smart, regarding a given problem and thus to facilitate the development of creative solutions. Though, these skills might be regarded as specific to art activities they are useful for building entirely new concepts and solutions in any domain. Acquiring *originality skills* depends both on innate qualities as well as on education and exercising (UKCES, 2014).

Active learning skills refer to the capacity of learning to learn and unlearn. Long life learning and wide life learning programs focus on developing those skills (UKCES, 2014). Active learning is necessary when we need to find the optimal solution of a problem, to develop a new product, during a live discussion or while working in project teams (De Boer and Winnips, 2015). In this sense, *active learning skills* require superior levels of thinking, of motivation and also of acting which will ensure successful results on the long run due to easier adaptation to various conditions and requirements. As Drucker (1993, p. 24) remarks, "The productivity of people requires, finally, continuous learning, as the Japanese have taught us. It requires that

people are constantly challenged to think through what they can do to improve what they are already doing. It requires adoption in the West of the specific Japanese Zen concept of learning: that one learns in order to do better what one already knows how to do well”.

Judgement and decision making skills are essential in any decision making process. Although everybody is making decisions, we are looking for developing the capacity of making good and very good decisions, especially in conditions of uncertainty and limited information. A good level of judgement and decision making skills will provide the individual selecting the best option regarding a certain issue. *Judgement and decision making skills* are now necessary at any organizational level because the rhythm of all activities and procedures is speeding up and good decisions are required at every moment, and in any business context (Spender, 2014).

Research methodology

For the present research we combined qualitative and quantitative methods in order to integrate their advantages (

For the theoretical argument of the researched topic we used the method of literature review. For the validation of the presented theories we used quantitative methods by applying a questionnaire. The investigation instrument contained 30 items with 5 Likert scale levels.

We elaborated the items of the questionnaire in order to identify the opinions of respondents regarding their level of acquiring 5 types of competencies. In other words, the main objective was to investigate the perspectives of students from Business Bachelor and Master programs from „Stefan cel Mare” University of Suceava in Romania (a public higher education institution) with respect to their level of acquiring five type of skills while attending their study programs. For this purpose we formulated five hypotheses, as follows:

H1: Students consider they have been acquiring ‘complex problem solving’ skills.

H2: Students consider they have been acquiring ‘critical thinking’ skills.

H3: Students consider they have been acquiring ‘originality’ skills.

H4: Students consider they have been acquiring ‘active learning’ skills.

H5: Students consider they have been acquiring ‘judgement and decision making’ skills.

The results obtained could be useful to determine a strategy of prioritizing the teaching agenda in order to deliver the necessary skills to be developed for the category of students enrolled in the investigated programs.

By using the Google platform – Event Feedback, we applied the questionnaire to students enrolled in the Business Bachelor and Master degree programs from the Faculty of Economics and Public Administration of the University “Stefan cel Mare” of Suceava. We collected 516 valid questionnaires that we processed using SPSS, version 25. First we checked the statistical validation tests and afterwards we performed the Varimax Factorial Analysis in order to obtain a hierarchy for the resulted main factors (Arkkelin, 2014; O’Connor, 2000). The Varimax type of rotation, when performing a Factor Analysis is the most popular because it groups together the items with the most similar evolution and thus simplifies their observation and interpretation. This type of statistical protocol facilitates the researcher’s work as it provides a more simplified structure of the investigated data (De Winter et al., 2009; Sass, 2009; Panter et al., 1997).

The main purpose of this research is to identify and interpret the factors formed by grouping the items in the questionnaire based on the opinions expressed by respondents,

namely bachelor and master students. The interpretation of the results will lead us to a better awareness of their level of knowledge, of their preferences in terms of acquiring certain generic skills as well as of the needs related to the educational program and the teaching methods. At micro level, the effect will be on improving education curricula, and at macro level, the effect will be to increase students' potential as parts of the human capital in the knowledge-based economy (Bejinaru, 2018).

Statistical tests and Exploratory Factor Analysis (EFA)

Providing statistical processing steps is required in such research, and in this case we have applied the Bartlett and Kaiser-Meyer-Olkin (KMO) tests (Table 1). Values of these tests indicate validation for applying this type of statistical analysis to the collected data. The KMO test has a value of .764, indicating sufficient suitability for the application of statistical analysis methods. If the KMO test value was less than 0.7, then it would question the adequacy of the method. For the studies conducted, the two tests, Bartlett and KMO, indicate excellent accuracy for the use of analytical factors.

Table 1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,764
Bartlett's Test of Sphericity	Approx. Chi-Square	4331,347
	df	435
	Sig.	,000

The next step for accomplishing the analysis of factors was to identify the most appropriate factor rotation option. In this sense, after rationalizing according to the known criteria, we determined the analysis of the main factors with Varimax rotation. As mentioned earlier, this type of rotation is advantageous with respect to the current database as it has the advantage of maximizing the variation of factor components and results in lower loadings of variables for each factor. However, this type of rotation may sometimes be inappropriate for exploratory factor analysis if variables tend to have a high degree of correlation (Gorsuch, 1997). In this case, applying this method eliminates data redundancy (Arkkelin, 2014). Following the application of the statistical functions presented above, the program returned to the first round of rotation nine factors that are representative of 70,225% of the replies recorded in the original database (Table 2).

Table 2. Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	8,341	27,802	27,802
2	2,330	7,766	35,568
3	2,024	6,746	42,313
4	1,860	6,202	48,515
5	1,774	5,913	54,428
6	1,311	4,369	58,797
7	1,184	3,948	62,745
8	1,133	3,777	66,523
9	1,111	3,702	70,225
10	,878	2,927	73,152
11	,838	2,794	75,946

12	,752	2,506	78,451
13	,710	2,368	80,819
14	,684	2,280	83,099
15	,630	2,098	85,198
16	,582	1,942	87,139
17	,540	1,800	88,939
18	,432	1,439	90,378
19	,359	1,198	91,576
20	,349	1,162	92,738
21	,344	1,147	93,885
22	,322	1,073	94,958
23	,261	,869	95,827
24	,250	,834	96,661
25	,235	,784	97,445
26	,199	,664	98,109
27	,190	,633	98,742
28	,149	,495	99,237
29	,120	,400	99,637
30	,109	,363	100,000

The basic idea is, that for this type of analysis, a factor is the equivalent of a latent variable, which is unknown previously, and which we will finally be able to analyze, understand and name according to its content. The factors loading model provides information in this regard. For example, if the load values are greater than 0.6 then they are considered important variables and the lowest of 0.4 are considered to be low and less relevant. In order to obtain a conclusive result, it is necessary to refer to the highest loading values because they are the ones that determine the factors and which are most relevant in factors formation.

According to this criterion, we were entitled to process a second Varimax rotation by specifying a value for factor loading higher than 0.5 and a predetermined number of factors in order to achieve convergence with the previously expressed research assumptions. Thus, in the following, we will analyze in Table 3 the component of the 5 factors according to the highest values and then we will name them according to the information observed in their structure.

Table 3. Rotated Component Matrix^a

Items	Factor				
	1	2	3	4	5
Q 05.	,687				
Q 27.	,648				
Q 25.	,640				
Q 18.	,624				
Q 15.	,620				
Q 11.	,517				
Q 08.	,423				
Q 09.		,747			
Q 07.		,730			
Q 19.		,595			
Q 24.		,537			
Q 28.		,529			
Q 22.		,472			
Q 06.			,871		
Q 16.			,742		
Q 04.			,545		

Q 02.			,504		
Q 14.			,462		
Q 29.			,458		
Q 03.			,417		
Q 23.				,649	
Q 01.				,648	
Q 17.				,608	
Q 12.				,589	
Q 21.				,501	
Q 30.				,429	
Q 13.					,757
Q 20.					,539
Q 26.					,518
Q 10.					-,497
Extraction Method: Principal Component Analysis.					
Rotation Method: Varimax with Kaiser Normalization.					
a. Rotation converged in 12 iterations.					

As a result of the factorial analysis, we will continue to present tables with descriptive statistics and internal consistency tests of the 5 factors. We are once again arguing that the decision on the components of the factors was based on the criterion of the highest load values and we considered the decreasing ordering. For example, for factor 1, the higher values are recorded by the first 7 variables and these are the most representative for respondents' opinions. The same rule we applied to identifying the other factors. In this context, factor 1 consists of the following items: Q5, Q27, Q25, Q18, Q15, Q11, Q8; factor 2 comprises the following items: Q9, Q7, Q19, Q24, Q28, Q22; factor 3 comprises items: Q6, Q16, Q4, Q2, Q14, Q29, Q3; factor 4 contains the items: Q23, Q1, Q17, Q12, Q21, Q30; and factor 5 consists of items: Q13, Q20, Q26. Below in table 4 we will present the tests to validate the compliance of factors and also the Mean values of factors.

Table 4. Reliability and Descriptive Statistics of Factors

Factors ranking	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items	Mean
Factor 1	,776	,785	7	4,25
Factor 2	,779	,782	6	4,30
Factor 3	,787	,780	7	3,91
Factor 4	,742	,751	6	3,86
Factor 5	,649	,655	3	3,64

For each of the five factors we have applied the internal consistency tests to assess the reliability of all the variables contained therein. Generally, values higher than 0.7 show a very good internal consistency. As it can be observed from Tabel 5, the values of the Means decrease in accordance with the ranking of the factors.

For factor 1, the Cronbach alpha test returned the value 0.776 which confirms the fact that the 7 variables contained the greatest influence regarding the perspective of the respondents regarding '*judgement and decision making*' skills. The highest value of the Mean = 4.25, for factor 1, confirms the fact that respondents acknowledge as a majority the

major importance of these skills and consider they are in the process of acquiring them during the bachelor and master education cycles. Thus, it can be associated also to the perspective that these students are studying for becoming business man, managers or highly specialized professionals so they deeply understand the importance of such skills for efficient judgement and decision making.

The 2nd factor revealed by the Rotation Matrix (Table 4) contains 6 items which refer as a main perspective to the category of '*complex problem solving*' skills. This factor has the second high value of the Mean, which stands for the fact that this category of skills ranks in the second position for the students interests of learning. This fact indicates a certain thinking pattern of this profile of students attending business education programs which strongly bends towards pragmatism and complex problem solving within the real world.

Factor number 3 consists of items which reflect the category of '*critical thinking*' skills. Ranking third, these skills are also very important in the perspective of respondents, fact which makes them really interested in acquiring this type of skills. Respondents were inquired about these skills with questions like: "I prefer professors who set challenging tasks as homework", or "I prefer to search and analyze myself the information I need for a certain task". The composition of this factor, of 7 items, showed that the skills of '*critical thinking*' are perceived in different ways by graduates and undergraduates.

Regarding factor 4 we have noticed that the 6 items included reflect issues about the '*originality*' skills. The Cronbach alpha test value is .742 indicating that the components included are representative and confirm a very good internal consistency. The high values of these variables that have been grouped together to form factor 4 mostly reflect the students' perceptions regarding the accumulation of '*originality*' skills. Although the Mean's value for this factor is the second lowest 3.86, we consider that students unconsciously manifest a slight reluctance to whether they are able to acquire the skills of creativity and originality. However, identifying this group of items really reflects the interest in developing a way of thinking and action defined by '*originality*' through which graduates will later generate the competitive edge within the organizations they will work.

Factor 5 registered the lowest value for the Mean = 3.64 which reflects that respondents had the lowest options regarding issues of '*active learning*' skills. The most plausible explanation is the theory that respondents are not familiar with the concept of '*active learning*' and thus do not fully understand the aspects and implications of this concept. The term '*learning*' has definitely been sensitizing given that students have offered values to items such as "Learning is a process to be continued after graduation", "It is fundamental to learn how to learn", or "Good learning must have a good motivation". One possible explanation for the last position in the ranking of this factor could be that students have superficially appreciated these items by considering their basic learning abilities without being an asset.

In conclusion to the EFA (Exploratory Factor Analysis) we relate the obtained results to the formulated hypothesis at the beginning of the research. Thus, we conclude that validation of the research states hypothesis were validated in accordance to the Factors' Rotated Matrix. In this sense, we consider that the factors' formation and ranking resulted after statistical processing represents the validation of the previously formulated hypothesis. We review each hypotheses related to the factor that ensured its validation, as following:

- *H1: Students consider they have been acquiring 'complex problem solving' skills, has been validated throughout the formation of factor 2;*
- *H2: Students consider they have been acquiring 'critical thinking' skills, has been validated throughout the formation of factor 3;*
- *H3: Students consider they have been acquiring 'originality' skills, has been validated throughout the formation of factor 4;*
- *H4: Students consider they have been acquiring 'active learning' skills, has been validated throughout the formation of factor 5;*
- *H5: Students consider they have been acquiring 'judgement and decision making' skills, has been validated throughout the formation of factor 1.*

We consider, that throughout this research we have achieved a general perspective from students' behalf about their level of acquiring five categories of crucial skills for their future in the labor market. It is a fact that ranking of the factors revealed the students perceptions towards the investigated issues and thus the top values show their 'preferences' while evaluating the level of certain categories of skills.

Conclusions and limitations

In the adaptation process, universities focus on their traditional mission of teaching, learning and research. Today, society asks much more from universities in terms of their contribution. They have to develop the third mission which refers to delivering services toward society and to be a part of the triple helix university-government-industry.

Against this backdrop, universities should contribute more to the developing generic skills of students and to stimulate their intention toward entrepreneurship, especially in the countries with emergent economies like Romania. This challenge for our universities triggered the present research for assessing the entrepreneurial skills of the students enrolled in economics and business programs at the University "Stefan cel Mare" of Suceava. We performed a quantitative research based on a questionnaire which have been answered by 516 students from our undergraduate and graduate programs.

Briefly to review the main ideas of our research we would reiterate that the results of the Exploratory Factor Analysis have confirmed the assumptions we made regarding the acquisition of skills which registered heterogeneous levels according to students' responses. The difference resides in the interpretation of the factors' composition in order to determine if students recognize the categories of skills and how they perceive their level of acquisition. Thus we can observe that the perspective preferred by students is reflected by the factors' ranking: a) in the first instance we can deduce that they have the best perception about their acquisition of '*judgement and decision making*' skills; b) secondly we observe that a similar perception corresponds to '*complex problem solving*' skills, maybe as being coupled with the previous type of skills; c) the third place, according to their preferences reveals the category of '*critical thinking*' skills, related to which we have noticed a careful approach as it registered lower values for the statistical indicators; d) factor number four, shows that students have a cautious attitude towards the activities that imply a creative way of solving problems and require '*originality*' skills; and e) about factor number five we can argue that, due to the fact that it ranked last, it implies that students have the lowest opinion about their level of '*active learning*' skills.

The research topic of universities preparing to provide students with the best skills is strongly related to strategic thinking and developing knowledge strategies at the levels of rectorate of any university. That will improve the contribution of our universities to economic and social value creation and to increasing their role in accelerating the development of our economy. That is in concordance with the forthcoming European Union's and governmental strategies of strengthening our educational system and its role in society. Finally, education and training suppliers should have the vision of their future as a dual model with the business sector in order to stay in touch with the market, to better meet the employers' needs.

The limits of this research are given by the investigated sample, which was located in a specific Romanian state university, presenting as such a contextual perspective. The survey about the top categories of skills necessary for 2030 could be extended at national level but with a more thorough revision of the investigating instrument construction (i.e. revision of the questionnaire). Also, the investigation should be extended to the business environment to get the vision of different firms about the necessary generic skills needed in the knowledge economy in the near future.

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THE KEY PROCESSES OF KNOWLEDGE DYNAMICS AND INTELLECTUAL CAPITAL IN ORGANIZATIONS

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Abstract: *Within this paper, we will conceptually approach the influence that knowledge dynamics processes have upon the intellectual capital at the organizational level. In order to achieve our scientific goal, we gradually present and discuss what we consider to be key issues for the research topic. First of all, we present our perspective on the complexity of the knowledge dynamics concept and explain why and how knowledge dynamics must be approached differently in order to obtain individual and organizational performance. For an organization is of fundamental importance to have a clear perspective on the types of existing knowledge. Correct identification of knowledge according to various criteria helps to manage them effectively and therefore contributes to the successful achievement of organizational objectives. Throughout another section of this paper, we argue that knowledge dynamics represents multiple transfers through different processes of which the best known are: socialization, externalization, internalization, combination. These processes are possible due to the existence of two forms of knowledge as tacit knowledge and explicit knowledge. Intellectual capital and knowledge dynamics are largely debated concepts and the global evolution provides continuously new issues for discussion due to their dynamic nature. The intellectual capital of an organization is a complex structure, a very dynamic component and an endless source of innovation and development if it is appropriately capitalized. Therefore, we underline the interdependences of knowledge dynamics processes and intellectual capital components within the organization. Finally, throughout this paper, we will approach in depth important issues about the influence of knowledge dynamics processes and intellectual capital at the organizational level.*

Keywords: *knowledge dynamics, intellectual capital, strategic thinking, organizational integrators*

Introducing the key processes of organizational knowledge dynamics

Following several decades of complex exploration and exceptional confrontations, there is a general acknowledgment and accommodation towards the dynamic nature of knowledge – all through the phenomenon of knowledge dynamics. As knowledge is dynamic by its nature we may say that it can move in the same shape however between various receptors. Additionally, knowledge can be changed progressively taking another form. The same information can exist in various structures of various individuals. With respect to its nature, knowledge has been alluded to as article or process, however next to this, scientists have examined around a few different angles like the setting of information, climate social, organizational or individual and even about its confinement be it the human mind, programs, information bases, or symbols (Bratianu, 2008; Bejinaru et al., 2011).

The most important papers on this subject speak in similar terms about the dimensions of knowledge dynamics. "Opposite of individual knowledge is the organizational knowledge that is very dynamic: upon they work a variety of forces" (Davenport & Prusak, 2000, p.25). Knowledge dynamics means knowledge transformation from one form to another form in terms of specific principles. The changes may occur both at the level of tacit knowledge and explicit knowledge, which can be continuously transformed from one form of knowledge to another. Considering all perspectives, the knowledge dynamics represents multiple transfers through different processes of which the best known are: socialization, externalization, internalization, combination. Transforming information into knowledge occurs when individuals: compare and integrate new information with existing one, imagine the consequences of their decisions and actions; share and analyze their ideas with others. Nonaka and Takeuchi have undergone complex research and found out that employees of Japanese companies have the ability to convert tacit knowledge into explicit knowledge through a dynamic process of human interaction. Based on their findings, they gave meaning and content to the concept of knowledge dynamics (Nonaka, 1994; Nonaka & Takeuchi, 1995).

The SECI model relies on the theory of organizational resources according to which the tangible resources were replaced by the intangible resources and the tangible processes were replaced by the intangible processes. Any organization owns both types of resources and *knowledge* represents the complementary component of the tangible resources dynamics. Thus knowledge management has the role of a link between operational management and strategic management. The level of focus upon the knowledge dynamics within the organization depends greatly on the managerial vision with regard to the development and enrichment of the organizational knowledge platform (Boh, 2007; Hansen, 1999; Hill, 2008; Lam, 2000). The leadership vision is the one which targets on the creation of necessary knowledge in order to complete the organizational resources in a long run (Bratianu, 2017).

A new perspective upon the intellectual capital components

In the current knowledge-based economy, Intellectual Capital (IC) has been seen as the key element for a competitive business. Intellectual capital is a company's asset such as professional experience, skills, knowledge, organizational structure, and routine and internal/external relationship. The most common intellectual capital framework classified these characteristics into human capital, organizational or structural capital and relational or customer capital (Mazzota & Bronzetti, 2013; Schiuma & Lerro, 2010; Edvisson & Malone, 1997; Spender, 1996; Spender & Grant, 1996; Stewart, 1997).

In this approach, human capital represents the overall knowledge, generally in tacit form, of all persons working within an organization. This knowledge does not remain in the organization when the individuals go out. Human capital consists of knowledge, skills, and experience of employees and managers. It is a kind of capital, which is not the property of the firm, so the company needs to enforce the link with its workers as well as needing to find ways to transform the tacit knowledge into structured knowledge (Bratianu & Vatamanescu, 2017).

The structural capital is represented by institutionalized knowledge and codified experience stored in the database, routines, patent, and manual. Whereas human capital is possessed by the employees, structural capital is controlled, possessed and managed

by the firm. In this sense, structural capital can be seen as the skeleton and the glue of an organization because it provides the tools and architecture for retaining, packaging, reinforcing, and transferring knowledge along the business activities. Finally, structural capital, consist of the stock of knowledge that stays in the organizations in form of tacit and explicit knowledge, that is contained in documents, routines and organizational culture. In another word, structural capital is a firm's supportive structures for knowledge creation and deployment as well as the set of knowledge, skills, and abilities embedded in the organizational structure (Mazzota & Bronzetti, 2013; Bontis, 1999; Stewart, 1997).

Furthermore, human capital is a fundamental component due to its endless generation of innovation as well as its impressive adaptation to the organization's needs. Human capital may be rebuilding at a greater speed then structural and customer capital, which need more time to reach a convenient estate. However, in order for the human capital to instantaneously bounce from one stage to another, pushing forward its evolution there has to be an appointed knowledge dynamic (Bejinaru & Iordache, 2011).

Relational capital, mainly tacit knowledge, it is understood as all knowledge arising from the interaction between the firm and its stakeholders. Relational capital reflects the organizational value that emerges not only from a firm's relations and connections with customers, but also with current and potential suppliers, shareholders, other agents, and the society in general (Ordoñez de Pablos, 2005). The relational capital is the source of the reputation, credibility, consent, and image of the organization (Leon, Pinzaru & Zbucea, 2015). The relational capital consists of knowledge resources derived from networks of relationships between peer, customers, suppliers, and business associates. These three new forms of capital capture a company in movement as it transforms its skills and knowledge into competitiveness. Therefore, the company needs to keep up and develop the existing capital structure and also acquire know-how, skills and professionalism, train and develop employees by emphasizing their business skills and capital to focus on trading and customer (Tennyson et. al., 2013).

When related to intellectual capital, knowledge has to distinguish through its value for the organization. Knowledge actively generates value, only throughout its use. The greater the knowledge dynamics is the greater impact of intellectual capital value. Knowledge creates value by incorporating it into the company's products. Knowledge dynamics significantly influences the company's capacity of producing and delivering valuable economic products to clients. Incorporating knowledge into the organization it will lead to valuable outputs which not only that enclose knowledge but also were the result of previously well-processed knowledge (Bratianu, 2018).

The research was undertaken in domains like knowledge management, IC and learning organization obviously emphasize the actual estate of disciplines in the context of organizational change. Each of these disciplines represents the need to shape the employee's knowledge as a must for the survival in the present business environment. Out of the whole picture, the researcher will construct the cause-effect relationship between the organization and its knowledge dynamics (Bejinaru & Iordache, 2010).

Intellectual capital comprises both human capital and structural capital for the purpose of using their synergy in order to increase the organization's growth. The company's value depends and also comprises the entire value of workers, together with the

company structure. Actually “the intellectual capital develops the company values and optimizes the company business operations”. (Davenport & Prusak, 2000) Intellectual capital implies human resources, information technology, business strategy, and employees’ participation in order to rapidly transfer the imperative experiences across the company. For individuals to share knowledge within the company, the management has to facilitate the dynamics of knowledge among employees, enabling them to become knowledge workers. The company has to put at disposal of members the available information, to provide communication and to train everyone to use the information and technology the company possesses (Hunter, 2002).

Discussing the intellectual capital dynamics means to have an integrative view of the following aspects. Competences include knowledge and practical abilities on which they base. The attitude refers to the employee volition of using his/her knowledge and abilities to serve the organization’s interest and he/she may be influenced by motivation and behavior. Intelligence refers to the employee’s capacity to use knowledge and abilities in various contexts and in order to increase knowledge and competences throughout learning. Relating capacity represents the individual ability to establish relations with others -clients, suppliers, business partners, and other stakeholders. The innovation and development rate comprises the intangible aspects that may improve the intellectual capital, all the ‘elements’ that were built or conceived and that will have an impact upon the future value of the organization’s intellectual capital.

The nature of the organization is to manage valuable knowledge only for itself and the individuals inside. The individuals’ nature is to adapt their work –of creating knowledge –to the organization’s requirements and also resources. The intellectual capital existing inside the organization generates that organization’s values, knowledge, and intelligence. The output of values, knowledge, and intelligence depends greatly on the input. The organization’s intellectual capital is built with the aid of human elements and structural elements.

The existence of knowledge dynamics serves as an organizational competence that helps in creating the intellectual capital at the necessary level that might increase the organization’s performance. The link between intellectual capital and knowledge dynamics at the individual level may be reduced to a person’s motivation to increase his/her participation in such a way to contribute to building an organization oriented towards learning. On the organizational level we picture the dynamic processes on the vertical axis contributing to transforming individuals’ assets into organizational, and on the horizontal axis, they reflect the progressive knowledge transformation into action (Bratianu, 2008; Bejinaru et al., 2011).

The influences of knowledge dynamics and intellectual capital

A knowledge-based perspective sees the organization as a repository of knowledge resources and capabilities. Throughout the perspective of intellectual capital, the organization’s knowledge dowry includes the expertise and experience of individuals, the routines and processes that define the distinctive way of doing things inside the organization, as well as the knowledge of customer needs and supplier strengths. To the extent that the knowledge and capabilities are unique and difficult to imitate, they confer a sustainable competitive advantage for the organization. Knowledge is cumulative, so the more the organization knows the more that it can apply what it knows to new areas

of opportunity and increase its returns. The primary rationale of organizations is thus the creation and deployment of knowledge. Performance differences between organizations are a result of their different stocks of knowledge and their differing capabilities in developing and deploying knowledge. Knowledge and competence have become the primary drivers of competitive advantage in advanced nations (Choo et al., 2001).

The field of intellectual capital poses special challenges because is conceptualized from numerous disciplines resulting in a mosaic of perspectives. Thus, accountants are interested in how to measure it on the balance sheet; information technologists want to codify it in systems; sociologists want to balance power with it; psychologists want to develop minds because of it; human resource managers want to calculate a return on it; and training and development officers want to make sure that they can build it (Choo et al., 2001).

The idea of intellectual capital surfaced from the dialogue between researchers and practitioners seeking a more complete representation of the visible and invisible assets and processes that constitute a firm's capacity to create value (Bontis, 1999). Conceptually intellectual capital consists of human capital and structural capital. Human capital is a function of the competence, intellectual agility, and attitudes of the organization's members. Structural capital refers to the learning and knowledge that is enacted in processes (process capital); knowledge that is codified as documents, objects, and intellectual property (intellectual assets); and the reputation and relationships the organization has developed over time with customers and partners (relationship capital). The dynamic perspective is opposite to the operational structure based on the static model of intellectual capital which has been developed from the practical need of measuring the contribution of intangible assets to the market value of a given company. In this perspective, intellectual capital is considered to be the sum of everything everybody in a company knows that gives it a competitive advantage (Bratianu, 2008).

Roos et al. (1998) observe the distinction between intellectual capital (IC) and organizational knowledge as follows: "While knowledge is a part of the intellectual capital, IC is much more than just knowledge. Brands and trademarks, as well as the management of relations with external parties (trade distributors, allies, customers, local communities, stakeholders in general and the like), are all dimensions of value creation." The strategic management of intellectual capital is not only concerned with the identification and measurement of stocks of organizational knowledge, but also with the control and alignment of flows of knowledge (knowledge dynamics) across organizational levels in order to enhance performance. Thus we must state that the interdependences of knowledge dynamics processes and intellectual capital are obviously continuous, strong and rapidly changing (Prelicean & Bejinaru, 2016).

Several authors (Ordonez de Pablos, 2003; Roos et al. 1998; Bontis, 1999; Pöyhönen & Smedlund, 2004) have noted that most studies tend to view intellectual capital merely from a static point of view, whereas in order to understand how organizations use intellectual capital for value creation, a more dynamic approach is required (Kianto, 2007). In figure 4 we show that human capital can be structured into three independent entities: knowledge, intelligence and values.

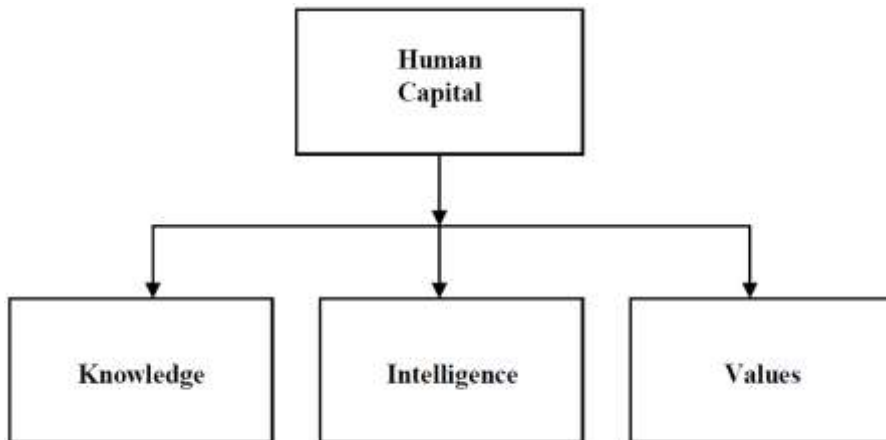


Figure 1. Operational structure of the human capital
 (Source: adapted after Bratianu, 2011)

Knowledge contains both tacit and explicit components which are generated at the individual level and afterward developed (due to their ontological dimension) at the group level and organizational level. Intelligence is considered in its multiple frames as the capacity of processing knowledge accordingly to a certain human dimension. The greater this capacity is the more will grow the IC. Values are considered here in the cultural framework of a given society. Values represent the most inner part of an organizational culture that guides the decision making process. At an organizational level, the values reflect traditions, symbols, rituals and other ingredients of organizational culture (Bratianu & Orzea, 2013; Davenport & Prusak, 2000; Edvinsson & Malone, 1997).

If we agree that human capital at the individual level can be structured into these three categories, then it is easy to demonstrate the fact that these categories can be identified in the structural capital and relational capital as well. That means that measuring intellectual capital as a sum of human capital, structural capital and relational capital is misleading since we can measure some entities twice or even three times. Human capital, structural capital and relational capital are not independent entities from their content point of view. On the other hand, knowledge, intelligence and values are independent entities and can be considered as building blocks of the organizational intellectual capital (Bratianu, 2011; Bratianu & Bejinaru, 2016, 2017).

Organizational experience demonstrates every day that knowledge is in a continuous transformation process at both individual and organizational levels. Performing a literature search and analysis, Kianto (2007) considers that there are three main dynamic interpretations for intellectual capital: a) value creation dynamic; b) organizational activities and c) change capabilities. (Bratianu, 2011) The first dimension shows how different resources interact to create value for the organization. That means that two companies having almost the same tangible and intangible resources may have different intellectual capital potentials due to the different ways these resources interact and combine together as a result of managerial capabilities.

The second dimension signifies the importance of all activities through which knowledge is generated, acquired, disseminated and used effectively in the organization.

It is not important how much knowledge one organization has got, but how much it is able to process effectively. For instance, there is an interesting learning paradox about universities, which are considered as knowledge-intensive organizations. The paradox may be formulated as follows: although a university is an organization based on learning processes, it is not necessarily a learning organization. It can become a learning organization if and only if there is at least a strong *integrator* to assure the transition from individual learning to the team and organizational learning (Bratianu, 2008).

The third dimension of intellectual capital focuses on organizational capabilities for generating and managing change. This change is necessary for continuous adaptation of organization to the turbulent external business environment. Innovation, learning, and renewal are the major topics related to this third dynamic dimension of intellectual capital (Kianto, 2007; Roos et al., 1998). Although these three dimensions are associated to the dynamic nature of IC, the basic structure of the organizational intellectual capital does not change, which is a severe limitation in understanding and evaluating the potential of intellectual capital (Bratianu, 2011; Franz, 2010).

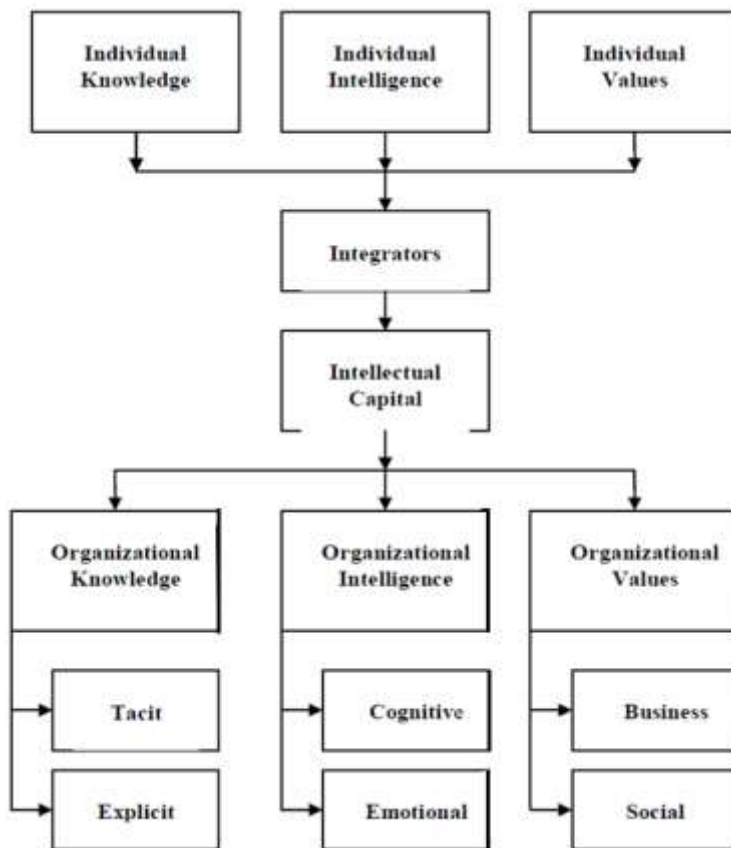


Figure 1. Dynamic structure of the Intellectual Capital (Source: adapted after Bratianu, 2011)

The potential of the IC's components may be entirely revealed and used through the organizational mechanisms that are called –integrators. Integrators- have the power to bring together the primary constituents, and to integrate them into the final intellectual capital of the whole organization making use of synergy, as in a system designing process (Bejinaru, 2016; 2017). We have already mentioned that the static model of intellectual capital has many limitations and vulnerabilities as the three main components of intellectual capital are not independent entities. At this point, Bratianu (2011) demonstrates that when measuring the organizational intellectual capital there are several elements that will be quantified more than once, maybe two, three or four times. Bratianu (2011) shows that each main component of the intellectual capital may be divided into three distinct/independent entities: knowledge, intelligence, and values. According to the new perspectives presented about intellectual capital and considering the dynamic nature of its components, we promote the new dynamic structure of the intellectual capital as designed in figure 5.

Within our figure 5, you can observe twice the term “intelligence” as it once relates to the individual and then to the group/company. The bottom line of this figure is that the circuit has logic and obviously shows the dynamics of intellectual capital within the organization. The represented process is continuous and each time its “loop” is different as all components are dynamic and change their proportions. The dynamics of human elements is irreversible and unstoppable as individuals learn either through training (if provided) or through practicing and experiencing; the dynamics of the structural elements is the consequence of humans’ entrepreneurship. The nature of humans is to change everything around in order to suit their interests and this is why humans learned in time to get things moving.

Conclusions

As we systematically argued in each of our sections intellectual capital has been debated by many, defined by some, understood by a select few, and formally valued by practically no one. The great challenge for business leaders is to discover the magic equation that shows how to increase the intellectual capital of the organization and thus obtain greater revenues.

The dynamic understanding of intellectual capital provides insights for managers. Instead of viewing the management of intellectual capital as controlling the stock of codified knowledge resources possessed by the organization at present, the dynamic approach directs attention to the future-oriented management of flows and the facilitation of knowledge sharing, learning, and innovation. More specifically, the value-creation-process view emphasizes that managers should be highly aware of how intangible resources influence value creation and what kinds of synergies there are between different types of resources.

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We conclude by reminding once again that the intellectual capital of an organization is a complex structure, a very dynamic component and an endless source of innovation and development if it is appropriately capitalized. Therefore, we underline that approaching the interdependences of knowledge dynamics processes and intellectual capital components within the organization represents a great opportunity for improving the use of organizational resources.

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