

# An Integrated Approach for Developing Showcase Profiles of Information Technology Students\*

TIJANA DABIĆ

Faculty of Philology, Sinergija University, Raje Banicica bb Street, 76 300 Bijeljina, Bosnia and Herzegovina.  
E-mail: tdabic@sinergija.edu.ba

SAŠA ADAMOVIĆ

Faculty of Computing and Informatics, Sinergija University, Raje Banicica bb Street, 76 300 Bijeljina, Bosnia and Herzegovina.  
E-mail: sadamovic@sinergija.edu.ba

RADMILA SUZIĆ

Faculty of Business, Singidunum University, Danijelova 32 Street, 11 000 Belgrade, Serbia. E-mail: rsuzic@singidunum.ac.rs

MARKO ŠARAC

Faculty of Informatics and Computing, Singidunum University, Danijelova 32 Street, 11 000 Belgrade, Serbia.  
E-mail: msarac@singidunum.ac.rs

Taking into account the global trends on job searching skills, particularly in IT sector, one should not neglect the significance of a lifetime personal and professional Web space. In order to answer the existing trends, the authors of the paper present the interdisciplinary joint work of the employees at their university to meet the needs of IT students and equip them to successfully enter the job market prior and/or upon their graduation. The paper presents an integrated experience of domain content and English language courses with the purpose to help students create a professional showcase via a visume (video resume), e-portfolio and LinkedIn account. The paper demonstrates the methodology developed and integrated into the curriculum of Computing and Informatics study programme at our university to scaffold students create and develop their e-portfolio on all three levels of studies: Bachelor, Master and Doctoral. The provided methodology helps students to demonstrate and organise the practical use of their academic knowledge acquired over the years. The e-portfolio data are further accompanied and linked to the visume and LinkedIn account. In order to evaluate the impact of the implementations made in our study programme, an online survey among 182 graduate IT students, who are part of University LinkedIn network, was conducted during December 2018. The results show that the collective experience is an excellent manner for future graduates to articulate their skills, abilities and achievements to their potential employers by placing them in a publicly accessible online space while at the same time the university displays higher teaching quality and gains better reputation.

**Keywords:** English for Science and Technology; professional showcase; e-portfolio; digital literacies; personal online space

## 1. Introduction

In recent years, there has been an increasing interest in job searching skills and the act of self-presentation. Nowadays self-presentation can incorporate the demonstration of competencies as well as merging of several online sources that present the applicant [1–4]. Although the manners and forms of self-presentation have been changing corresponding to the existing demands and trends, the aim to meet the needs of the potential employers has not. Even a long time ago, in 1482, when Leonardo de Vinci was writing a letter, which was considered to be the first resume ever, had this aim in mind [5]. Seeking a job, Leonardo de Vinci wrote a letter listing his competencies to the Regent of Milan at the time. First nine competencies that Leonardo listed referred to his war-winning crafting skills (e.g., making lightweight bridges) leaving his painting and sculpture making the last. Petrone [5] states

that Leonardo's resume would be given recognition even today, however, with different features: *"Today, on his LinkedIn profile, he could link to a YouTube video showing off his chariots in action, or embed photos of his great architectural designs, or blog about his new idea for a cart that could fly by attaching a propeller to the top of it."* Apparently, in the second decade of the twenty-first century, in the time of growing diversity of both urban and online space, job searching skills require a highly and diversely equipped kit of graduate attributes or transferable skills [6].

The authors of this paper strongly believe that students should be taught how to highlight and single out the skills and competencies that they are the most proficient at in the manner to address the needs of potential employers. In order to assist our students in mastering these prerequisites, we teach them, apart from domain content knowledge and skills, how to prepare to enter highly globalized and

digital labour market by continually working on their professional showcase. In order to respond to these demands, the students are exposed to integrated learning and practical experience via domain content courses and English language courses: (1) through obligatory domain content projects uploaded on the platform developed by The Faculty of Computing and Informatics; (2) setting up a LinkedIn account and making valuable and meaningful connections and (3) recording a visume in English.

The paper provides theoretical framework on visumes, e-portfolios and LinkedIn, the methodology how these prerequisites are incorporated in the curriculum including the results of the quantitative research conducted in order to test the efficiency of the integrated approach.

## 2. Theoretical background

### 2.1 Visume

A video resume or a *visume* is a short video created by a job applicant that best describes their skills and qualifications. This new genre has emerged due to the increased use of technology and the Internet in recruiting procedures [7]. The format of a video resume can range from a videotaped message to a multimedia message, including various animations and text [8]. The popularity of video resumes manifests in increasing use of videos and media attention to video-based applications, both in Europe and the United States [9]. The apparent transition from traditional resume to video mode corresponds to the findings on customer experience in the contemporary business world [10]. As Forrest [10, p. 2] explains: “the customer experience is at the heart of digital transformation” meaning that digital experience affects prospect and customer experiences. In our case, customers are potential employers while the products are our students/graduates.

The superiority of video resumes to paper-and-pencil version is multifaceted: multimedia allows applicants to demonstrate their knowledge, abilities, skills and other competencies i.e. it is useful for showing any type of performance-based work. Furthermore, additional auditory and visual information provide potential employers with a more profound impression of applicants. Despite so many benefits of e-recruitment, there is the other side of the coin. There is empirical evidence that some e-recruitment practices can cause some adverse applicant reactions that may be perceived as unfair and intrusive, usually by ethnically diverse applicants [11, 12]. What is more, there is risk of the script quality, filming style or location seen as inappropriate and as such seen by HR as unprofes-

sional of new technology in recruitment and selection, too.

Nevertheless, if managed well, visume job application has much more advantages than disadvantages. However, some aspects and issues should be taken into consideration during the very process of *visume* development since a resume has itself undergone significant growth and a makeover, as well as a visume. Consequently, many strategies and instructions have emerged online that can be addressed to. Google search with the keywords “*resume writing*” has shown 69.900.000 hits in 0.68 s. Among the hits, there are websites offering instructions, guidelines, tips, writing services, proofreading services, images and videos on resume writing and visume recording. The hits content merely proves the existing need for job searching skills services, in this case, resume writing and visume (i.e., Video CV) recording. As people are more and more orienteered towards visual exposal of information [10] the resume display and format have also been evolving to address the needs of potential clients. As a result, online agencies have adopted their services to the current job searching market needs offering colorful, creative and catchy resume templates with numerous and various designs, e.g., Loft Resumes [13]. The advertising sentence of Loft Resume company illustrates the current trend in the market: “*We custom typeset their written content into their chosen design, transforming what used to be an entirely useful document into something beautiful and compelling. Our customers are not hiring a machine; they are commissioning trained graphic artists who will custom-typeset every word so that their story is told, their history is communicated, and their accomplishments are revealed.*” The words “beautiful” and “compelling” again draw attention to the importance of visual impression of smartly organized content with a dash of artistic element interwoven.

Moreover, these agencies broaden their services to the LinkedIn Summary Writing, the LinkedIn Monthly Management—3 months, Cover Letter Writing, the Career Makeover on three levels (depending on the years of working experience) Professional, Executive and C level. Apart from the services they provide, the agencies heavily write on the latest trends and demands in resume writing and visume development. Some of them deal with specific professional populations. For example, as a highly technical industry is continuously evolving Doyle [14] advises IT specialists to continually update their resumes/visumes to keep up. Furthermore, he also advises IT job seekers to highlight accomplishments instead of listing the tasks they performed did at their job position. Then, to use the keywords from the job listing in their resume in order to address the employer’s need

and to pass the Applicant Tracking System<sup>1</sup> Used by some of the employers.

It is essential to make a well-structured and attractive resume-visume, but if accompanied with the online display of acquired knowledge and competencies it increases the chance for the applicant to be included in the job interview shortlist. E-portfolio is a tool that can provide such an opportunity.

## 2.2 E-portfolio

Being a witness of an ongoing process of learning environment being replaced with new technological tools, the implementation of e-portfolios in higher education should be taken into consideration as it is the responsibility of the university to equip students not only with knowledge but with skills to help them meet the new demands in nowadays labour market [15, 16]. Portfolios are defined as collections of artifacts on which learners can reflect, on which they can be assessed, and on which they can base future job applications implying that portfolios, as such, are not a new construct [15]. The shift from paper version to the digitalized version occurred in the early years of the twenty-first century and is parallel to the shift towards e-learning in general [1, p.4]. Banks [17, p.3] describes e-portfolio as an electronic format for learners to record their work, their achievements, and their goals, to reflect on their learning, and to share and be supported in this. It enables learners to represent the information in different formats and to take the information with them as they move between institutions. Lorenzo and Ittelson [18, p.133] define an e-portfolio as a digitized, representative collection of one's work or 'artifacts' that can take various forms (audio, text, pictures or/and video) on a website or another electronic media.

E-portfolios can be further discussed and defined by the type of portfolio (development portfolio, showcase portfolio, research portfolio, etc.), type of e-portfolio information, by stages of learning, participants that have access to the portfolio, the functions of portfolios, etc. [16–19]. Since the referred categorization overreaches the scope of the paper, the focus is merely placed on the literature relevant for the e-portfolios at tertiary level that present the evidence of assessment, it is a part of several courses and it can be assessed by the student who makes it, by the professors and by fellow

students. The primary purpose is to earn credits to pass the exam while the secondary purpose is to serve as an supplement to accompany job applications in the manner of expanded digital resume. The most suitable definition of e-portfolios characterizing the e-portfolio defined in the paper is provided by Pegrum & Oakley [20, p.23]: *"In higher education, e-portfolios may serve as constructivist learning spaces where students can reflect on their own learning journeys; as centralized collections of work on which students can be assessed; and as integrated showcases where students can demonstrate their accomplishments to potential employers."* From this perspective, an e-portfolio presents the combination of factual evidence of achievement and reflection being beneficial to graduate jobseekers. As such, it can, but it does not have to integrate the evidence and experience from across the entire period of degree studies. However, certain universities have it as a graduation requirement [21].

Although it holds many benefits, one has to be careful when establishing a course or studies that, as an integrative part, include e-portfolios. Before setting e-portfolio as an objective or a mandatory concept, some issues should be considered. Chaudhuri [22, p.7] proposes five questions in the process of (de) constructing e-portfolios [22, p.7]: (1) why should one use a portfolio for their course, (2) what would be the outcomes of the final project, (3) how is the e-portfolio going to be structured, (4) how should e-portfolios be assessed and (5) what electronic platform should be used. After e-portfolio implementation the institution should definitely get the feedback from the users. Some research, examining the merits and challenges of digitizing portfolio, report on the encountered obstacles that should be taken into account in the process of e-portfolio implementation [22].

Making the e-portfolio purposeful for the instructor, organiser and all the stakeholders of the e-portfolio, particular attention should be paid to the students who are to be its conductors and primary beneficiaries [23]. Students must perceive the value of e-portfolios both for learning and career development in order to think it is worth spending time on it and to be motivated [24–26]. Motivation is expected to spur the desire to learn, particularly, in the process of e-learning [27]. The aforementioned has been proven with ACRS Motivational Design model [28] used in order to measure the learners' motivation level after the implementation of e-portfolio as this can be helpful in the process of raising students' motivation and focus. ACRS stands for the following terms: attention (about gaining and sustaining attention to the learning context), relevance (relating to clear learning goals and needs), confidence (expectancy of success and

<sup>1</sup> An applicant tracking system (ATS) is a software application that enables the electronic handling of recruitment needs. An ATS can be implemented or accessed online on an enterprise or small business level, depending on the needs of the company and there is also free and open source ATS software available. In many cases, they filter applications automatically based on given criteria such as keywords, skills, former employers, years of experience and schools attended.

failure in learning) and satisfaction (accomplishments in learning) [28, p.139].

The last component in the process of IT students showcases development is the LinkedIn account discussed in the following section.

### 2.3 *LinkedIn*

LinkedIn has become the world's largest business social network, primarily aimed at linking employers and job seekers. It was founded in 2003 as a business-oriented social networking site with the mission to connect the world's professionals to make them more productive and successful. With more than 500 million members worldwide, LinkedIn is the world's largest professional network on the Internet organized as a diversified business model earning revenue from Talent Solutions, Marketing Solutions, and Premium Subscriptions products [2]. However, not only is the role of the LinkedIn social network to link, but also to allow discussion on the set topics. LinkedIn users frequently affiliate with their work network maintaining a list of contacts of people they know and trust. These "connections" maintain communication, trade information and refer to each other. A mechanism designed to facilitate trust among members is a "gate-access approach" that allows a connection if there is a pre-existing relationship or the intervention of mutual contacts. 'Bring together your professional network' with the tagline 'relationship matters' can summarize LinkedIn policy [29, p.204].

The notion of "connectivity" in business has always been of a great significance throughout the history as well as in the Digital Era we live in, only the way and the medium of communication and making contacts has changed. Social media platforms are perceived as a new public sphere, a new private sphere and new corporate spheres where changed social norms for communication and (public) debate, the transformation of legal norms concerning private sphere and privacy and new business models can be noticed [1, 30]. In LinkedIn context the focus is placed on the changes apparent in social media platforms concerning the corporate sphere and new business models. Here we tackle the notion of connectivity again. What is important to be comprehended on social network sites is the way how they activate relational impulses, i.e. relationships wrapped in code, generating a type of engineered sociality [30, p.161]. Via LinkedIn students, i.e. future graduates should be educated on the principles of the connectivity and gained popularity of virtual society. With this insight, students can learn how to give themselves a monetized value to sell themselves. Monetary values generated by social media platforms are called "social econom-

ics." Within a wide range of valuable sources of these platforms, making contacts and sharing creative expressions are considered to be a part of their monetizing capacity [31].

In addition to personal profiles, the new LinkedIn network features the possibility to create an institution profile. For the academic world, in the case of academic institutions, groups can be created in the form of an alumni association [2]. Although many universities worldwide have developed their web services for the former students' alumni base, this approach has revealed many weaknesses. The problem arises due to ongoing career changes and the need for the constant update of the profile. For instance, if someone advances in particular area, earns different industrial certificates, changes the job position within the same company or changes the company they are employed in, the information is not updated in time. With the LinkedIn profile alumni, all the information posted are relevant and continually updated. Furthermore, as opposed to the alumni service created by an academic community, LinkedIn is a vibrant professional environment where all the participants can interact, communicate, share interesting news about their professional orientations and inform colleagues on the latest trends. There are other social contributions as well, for example, after graduation, students remain in contact with their colleagues and professors, and in this way, they are acquainted with the educational activities of their University.

Besides the simple free profile, which can be created by individuals and legal entities, there are premium profiles that are frequently used by company human resource management departments. In this manner, HR departments seek potential new workers for their working communes. The highly advanced search filter allows the search of finest details, especially within the IT world, where new employees need to be recruited based on their knowledge of specific technologies and projects they have previously participated in.

As a result of the existing trend, there is an urge for everyone to continually improve their profiles in order to be selected for a potentially better and more paid job.

### 3. A case study: Visume, LinkedIn and E-portfolio—an integrated experience

Since the main scope of the paper is the integrated experience of domain content courses and English language courses with the purpose to make students visible on the online labor market, this section put focus on the illustration of the specific methods, techniques, and projects that have been employed in order to achieve the stated objective. First, the

domain content courses tasks are elaborated, and then for English language ones.

### 3.1 Domain content courses: *E-portfolio and LinkedIn*

Besides the classes focused on theoretical knowledge, contemporary IT study programme offers a large number of practical classes. For all domain content courses students are obliged to do project work while being supervised by the academic staff. Furthermore, students are enabled to upgrade the projects which they started during previous courses upgrading them with newly acquired knowledge. Since this type of student work is supervised and graded by the teaching staff, the project is made publicly visible on an electronic platform created for that purpose. In the traditional approach students were expected to present their project (e.g., developed software) to the subject professor and the other students in the group. Their benefits were only a higher grade and a set of acquired IT skills that do not go beyond university framework. In this manner, the full potential was not exploited and the effort was not justified. Having the same activities put into a new perspective, through the proposed methodology, a more significant impact on the labor market has been made.

Students who want to post their projects online create their profiles on the platform. Having their profile created on the platform, students can add and organize any piece of work: audio or video, images, text, peer or instructor feedback, etc. The platform with all the projects uploaded is accessible to other students as well as to the interested parties outside of the University. The parameters for the assessment of students' project are defined. The syllabus for each domain content course, requiring a project, has a clearly defined scale of projects assessment within the course in accordance with the outcomes of the course. After a successful defense, the completed project is uploaded on the platform and linked to the student's profile.

The educational process encompasses three cycles of studies (Bachelor, Master and Doctoral). The mechanism for artifacts collection has been designed in accordance with the type and level of studies. For example, masters studies are career-oriented, while doctoral studies are research-oriented; therefore the nature of the artifact is different. Considering the diversity of potentially loadable files as well as the three-cycle period it is hard to categorize the students' e-portfolio since it can be placed in more than one category: development, showcase, research, etc. It can be regarded as a development portfolio for showing personal and professional growth throughout the years of schooling. The projects tasks allocated to students are

chosen in the manner to present their hard and soft skills. Furthermore, in the case of assigning a new software development task, the professors check is there any similar already developed in the market providing the opportunity for students to have something worthy in their showcase. Students and interested parties can track their improvements and works style of an individual as well as their interests and teaching process. Furthermore, it can be seen as a research portfolio as it can be utilized by Master and PhD students who can upload and upgrade their research work. In the end, it can be regarded as a showcase portfolio, displaying the collection of artifacts organized in the manner the student/graduate envisions to show it to potential employers.

The next building block in the showcase of our IT students is seen to be LinkedIn account. Building a LinkedIn profile is an activity that requires some time. For this reason, the information technology students at the university are acquainted with the LinkedIn network since the 2nd year of their Bachelor studies. They are obliged to create their first professional profile, fill it with the information related to the acquired certificates during the studies, conducted practices/internships and successfully completed projects. The University has signed internship agreements with companies from IT sector where students can apply for an internship. The opportunity to earn certificates is given to the students within the University space. More precisely, the university has signed partnership agreements with the following companies: Oracle, MikroTik, Microsoft IT Academy, Cisco, Galileo and Amadeus that enables students to earn these certificates at the university. Along with developing a personal LinkedIn profile, the students are encouraged to join Sinergija University Alumni. In this way students make valuable connections, become visible on the most prominent social professional market, become a part of both University and global community and monetized themselves by tracking and updating their professional path.

The fusion of e-portfolio and LinkedIn data represents an important stepping stone for future IT graduates. However, it can be enhanced with one more component—a visume.

### 3.2 English language course element—*Visume and other projects*

Since the establishment of The Faculty of Computing and Informatics at Sinergija University, foreign languages were categorized as an obligatory component throughout the whole schooling process. The students attend and take two language courses each year (English and Italian)—in winter semester one language and in summer semester the other one.

Concerning English language courses first two are General English courses at B2 level of CEFR [32], while the other two are a combination of General English courses at C1 level and English for Specific Purposes elements. For ESP element, in this case, its branch EST (*English for Science and Technology*), an in-house booklet *Business English for IT Students* [33] was developed to suit the needs of our IT students. The booklet includes eight chapters: Company and job position questions, Resume writing, Cover letter writing, Job Interview, Telephoning, Videoconferencing, Meetings and Negotiating with appendices Useful internet links.

The material gathered for this purpose was grounded on the findings of a mixed-method research (PhD thesis) *The Needs of Information Technology Students in English Language Teaching in Serbia* [34]. Concerning professional showcase of IT students and future graduates in the light of job searching skills and the professional toolkit of 21st global engineer the results of the research conducted confirmed the exiting trends in the global labor market arena [35, 36, 4]. Illustrating the qualities and competencies of the 21st-century global engineer Jensen states: “. . . a number of new competencies, with an emphasis on an increased ability to communicate . . . and good foreign language skills” [37, p.2]. Building our curriculum towards the demanded standards and qualities we endeavour not only to inform our students of them but to assist them in developing their competencies in the digital world they have to work and live in [38–41]. To accomplish that within English language courses III and IV IT students are assigned with four seminar paper topics: I Record a visume, II Record a simulated Job Interview, III Create an IT company profile clip and IV Present domain content course project in English.

Concerning the scope of the paper, the tasks concerning Visume recording and domain content project presentation in English are worth elaborating on. Presenting a project is scheduled for English Language III course, while Visume design and recording is scheduled for English Language IV course. Both domain content course professors and language teacher see the students at that level ready and knowledgeable enough to start presenting their work and competencies in English. First reason they see them capable to meet these tasks is the mastery of key terms in English as the students from the first year on start acquiring domain content courses key terms in English as both teachers and students prefer them to their equivalents in Serbian. The second reason is that they have mastered General English during the first and second year of their studies gaining fluency and accuracy. Third reason is as they already present mentored

projects to IT professors in Serbian, the concept is prepared and evaluated. Presenting a project from their domain content courses in English is a valuable experience giving them an opportunity to talk about their work, stages and outcomes in English. Clear instructions and the criteria for both tasks are provided on the subject page. The parameters for the visume assessment are the quality of the video, presentation and delivery, the content, the audio-visual effects and the language. When presenting a project the focus is on a well-structured presentation, language accuracy and fluency and domain content vocabulary use. The students are—assessed by their peer who use the LEG—scale<sup>2</sup> [42] and by the teacher who provides a detailed feedback.

As visume technology allows applicants to demonstrate their knowledge, abilities, skills and other competencies, an IT student/graduate has a special status regarding this feature. No profession can be so fully express in video resumes as in IT field since they are educated how to use multimedia. In this manner, they are not only presenting their competencies but demonstrating them. Before starting the filming of visumes, in order to see all the features that can be utilized in the process of visume design and development, the students are encouraged to watch, analyze and evaluate a visumes online [43]. In this reference [43], the applicant, at the end of the referred visume, provides the link to his e-portfolio, written version of his resume and LinkedIn profile. Due to that, his visume present the integration of all the valuable information in one place with the note of personal touch and appearance. Having in mind these possibilities, we advocate that teaching student to reach their potentials in this genre should be a compulsory component of IT curriculum framework.

### 3.3 The integrated approach tools features

In order to provide a deeper insight into the features of the implemented showcase tools, the authors provided cross-feature taxonomy in Table 1.

The data in the Table 1. show the mutual complementation of these three tools being an excellent foundation for future job applications for several reasons.

E-portfolio has a significant and irreplaceable role in the light of the student's personal and professional growth. What is more, the developmental process provides an adequate reflection on

<sup>2</sup> The main parameters the presenter is assessed by are: topic, technical support, presentation and delivery, interpersonal skills, language. For each parameter the speaker is evaluated according to the listed competencies on the scale from 1–10. After the presenter is peers-evaluated, the English teacher provides the feedback.

**Table 1.** Cross-feature taxonomy—E-portfolio, Visume and LinkedIn

FEATURES		
LINKEDIN	VISUME	E-PORTFOLIO
<ul style="list-style-type: none"> <li>• e-portfolio projects built in an online platform;</li> <li>• each students has their own profile;</li> <li>• artefacts uploaded can be in the form of text, audio, video, images;</li> <li>• projects uploaded after being approved by the mentor;</li> <li>• projects can be viewed and commented by peers; encompasses three cycles of studies (Bachelor, Master and Doctoral);</li> <li>• can be showcase/developmental/research portfolio;</li> <li>• auto-generated recommendation letter by reviewed contents.</li> </ul>	<ul style="list-style-type: none"> <li>• it is in English;</li> <li>• has all the main parts of a printed version of a resume;</li> <li>• personal information, education, work experience, competences and skills; includes information on e-portfolio projects;</li> <li>• includes certificates;</li> <li>• includes information on internships; supervised by both domain content—professor and by English teacher;</li> <li>• should demonstrate the use of multimedia tools.</li> </ul>	<ul style="list-style-type: none"> <li>• includes personal information, education—and work experience information;</li> <li>• includes information on e-portfolio projects;</li> <li>• includes certificates;</li> <li>• includes information on internships;</li> <li>• includes language competencies;</li> <li>• includes valuable connections to the people from home university and outside;</li> <li>• Skills &amp; Endorsements section carefully built based on the skills and competencies gained through education and projects.</li> </ul>

the student's performance that generates the development of new competencies that contribute to student's competitive advantage in the labor market. Frequently, employers from IT engineers expect some work experience, so each student has the opportunity to acquire the appropriate education and skills during work on projects that will be part of their portfolio. The employers use Internet browsers to find additional information about candidates applying for a job vacancy. For this reason, this platform makes it easier for employers to find quality candidates.

Furthermore, when students organise the script for their visume they have to think about their competencies and qualities, those competencies and qualities to translate in English and afterwards to come up with the order and the manner of presenting them. During the process of creation of their own visume students develop their digital literacies and use higher order thinking skills to accomplish the task as they are involved in a creative process. Having the opportunity to reflect on their competencies and gaining practical skills with project tasks enables easier development of the LinkedIn portfolio.

#### 4. Methodology

The quantitative research method was employed in order to examine the efficiency of the integrated approach. An online survey was used as a research instrument and it consisted of a series of questions. The research was conducted among the graduates of Faculty of Computing and Informatics—members of University Alumni LinkedIn network. The authors opted for an online survey as many target respondents have changed their residence. The survey, usually in the form of a questionnaire, is one of the most common methods of collecting data on attitudes and opinions of a large group of respondents and as such is used to explore many

different issues in education [44]. Questionnaires allow researchers to gather information from students, such as their beliefs and motivations related to learning languages or their learning responses or instructions given to them in the classroom or the activities they participated in [45].

The closed-ended type of questionnaire was chosen for the research as this type of questionnaire usually implies a greater measurement system uniformity providing greater reliability of obtained data. Besides, they lead to responses that can be easily measured and analyzed. The researchers designed the questionnaire and distributed via Google Forms in December 2018. The questionnaire encompasses three questions and twenty-three statements. The first section of the questionnaire addresses the personal information (the sex, age and job position) while the other part with the statements enquires the respondents' attitudes on the integrated experience presented in the paper examined by a five-leveled Likert scale (1—strongly disagree, 2—disagree, 3—neither agree nor disagree, 4—agree and 5—strongly agree). The segment with the statements is divided into three sub segments: E-portfolio, Visume and LinkedIn.

The analysis and interpretation of data were carried out based on the results of the questionnaire. The purpose of analyzing data was to obtain usable and useful information about the integrated approach. A quantitative analysis of data was used. All individual responses were added together to find the highest frequency of occurrence given in percentages. The first part of the questionnaire defines the sample: included 182 respondents—sex: 85.7% male and 14.3% female, age: 20–25 years old (52.4%), 25–30 years old (27%), 30–35 years old (7.9%), 35–40 years old (6.3%) and 40+ years old (6.3%).

The majority of respondents (more than 90%) hold a job position in IT field while the rest is unemployed or work in some other business

sector. The results from the other part of the questionnaire with the statements are given in the following section.

## 5. Data analysis and discussion

The Data Analysis and Discussion section presents respectively the results of three sub-segments: E-portfolio, Visume and LinkedIn. The presentation of the obtained results is organized in the manner that the point on Likert scale that was chosen by more than 50 % of respondents is highlighted in grey and the answers with the highest and lowest score are commented for each table.

The E-portfolio section has eight questions. It is interesting that the statement with the highest score (71.4%) *E-portfolio is a good way for ambitious students to show their talents* actually proves the individual benefit that each student can get leaving its own mark. The respondents least agreed with the sixth statement *The e-portfolio that has passed the mentorship of the professor can significantly increase the chance for employment*. Although it is the lowest score it still express the positive attitude and the

belief in the value mentorship adds to an e-portfolio as only 4.8% of students disagree with the statement and 12.7% neither agree nor disagree. The results for E-portfolio segment are shown in Table 2.

Having seven questions reaching over 50% for 5th Likert scale answer, it is evident is the respondents' positive attitude towards the e-portfolio implementation and its many benefits on students learning process and better labor market visibility.

The results for Visume segment are shown in Table 3. The distribution of respondents' answers on the Likert scale is quite different from the one in Table 2. Even though the majority of students' answers are in the scope of 3rd and 4th point of the Likert scale, only one exceeds 50% and it relates to the resume not visume—*Writing a resume in English should be an integral part of the curriculum of the English language classes for IT students*. The statement the respondents least agree with is for the fifteenth statement *It is useful that the Visume displays the project segments from the E-Portfolio*.

Contrary to our expectations, this research did not confirm our belief on the efficiency of Visume in job application processes. There are several possible

**Table 2.** E-portfolio Results

E-PORTFOLIO		1	2	3	4	5
1.	The implementation of E-portfolio, based on practical tasks within domain content courses, influences both the academic and professional development of students and courses.	0	1.6	9.5	25.4	63.5
2.	E-portfolio should be developed on a public online platform where the roles of a student and professor are clearly defined.	0	3.2	7.9	28.6	60.3
3.	The developed projects uploaded on the online platform within a student profile would make the student actively think about the skills and knowledge acquired.	0	1.6	17.5	22.2	57.7
4.	The e-portfolio have raised my awareness regarding the knowledge, skills and competencies I have adopted and mastered.	0	1.6	9.5	28.6	60.3
5.	I can use my e-portfolio to show it to a potential employer during my studies or after graduation.	0	0	7.9	22.2	69.8
6.	The e-portfolio that has passed the mentorship of the professor can significantly increase the chance for employment.	0	4.8	12.7	33.3	49.2
7.	E-portfolio is a good way for ambitious students to show their talents.	0	0	6.3	22.2	71.4
8.	E-portfolio can navigate the learning process throughout all years of studying to the desired outcome.	0	0	9.5	34.9	55.6

**Table 3.** Visume Results

VISUME		1	2	3	4	5
9.	Writing a resume in English should be an integral part of the curriculum of the English language classes for IT students.	1.6	3.2	14.3	17.5	63.5
10.	A good visume in English can raise the employment chances for an IT student in comparison to a written version.	0	12.7	31.7	25.4	30.2
11.	Visume can demonstrate the specific knowledge and skills of an IT graduate.	3.2	12.7	28.6	27	28.6
12.	Visume in English can demonstrate to a potential employer the job applicant's English knowledge level	0	7.9	19	28	44.4
13.	Video CV can show presentation skills.	0	4.8	15.9	38.1	41.3
14.	Video CV can give an impression of the personality of the candidate.	1.6	9.5	28.6	31.7	28.6
15.	It is useful that the visume displays the project segments from the E-Portfolio.	0	7.9	30.2	39.7	22.2
16.	It is useful that the visume contains a link to the E-Portfolio profile of the student.	0	3.2	20.6	38.1	38.1
17.	It is useful that a visume contains a link to LinkedIn.	0	4.8	20.6	36.5	38.1



**Table 4.** LinkedIn Results

LINKEDIN		1	2	3	4	5
18.	IT students should start creating and completing their LinkedIn profiles during the study.	0	1.6	12.7	33.33	52.4
20.	IT students should connect with graduates of the home university.	0	1.6	15.9	31.7	50.8
21.	IT students should also make valuable connections with the people out of home university network.	0	4.8	17.5	23.8	54
22.	By completing the LinkedIn profile successfully during the study, I significantly increase the visibility in the labor market, both global and regional.	0	1.6	19	27	52.4
23.	The combination of Visume, E-portfolio and LinkedIn profile significantly increases the chances of a job.	1.6	3.2	9.5	33.3	52.4

explanations for these findings: student did not see it as useful, did not apply for a job with one or they were hired on the basis of a resume, LinkedIn profile or e-portfolio or the combination of these options. An important issue emerging from this findings is that even though nowadays digital generation is more video-oriented, in both personal and professional sphere, in this case, they see traditional printed/typed version more effective than its video version. Nevertheless, they agree that a visume can demonstrate to a potential employer the job applicant's English knowledge level as well as presentational skills. The respondents to some degree agree that visume should be linked to LinkedIn and e-portfolio while they least agree that Visume can demonstrate their specific IT skills, reveal the personality traits and that a visume should integrate some parts of their e-portfolio data.

The results for the LinkedIn segment are shown in Table 4. The results for the LinkedIn segment indicate even higher level of relevance than the E-portfolio segment since for all the statements more than 50% of respondents opted for the 5th point on Likert scale.

Unexpectedly, the results have proven LinkedIn to be a valuable showcase tool for IT students. The possible explanation is that LinkedIn, to some degree, resembles some social networks young people like. LinkedIn is the only professional showcase tool where members can build their "lifetime professional online space" that can be continually updated and connected with a feature of a global job post search bar. The advent of online visual personal space was envisioned decades ago and the term "a lifetime personal Web space" was coined [46]. In the film on "The Social Network" [47], fictional Mark Zuckerberg answers on the question when the new website named Facebook would be finished: "It won't be finished. That's the point. The way fashion is never finished." Social network sites (SNSs) as Facebook, LinkedIn, Twitter, Tumbler as well as user-generated content (UGC) sites as Blogger, Wikipedia, YouTube have conquered communication space and divided it. These platforms present the sociotechnical engines of trends in communica-

tion, just as fashion, are never finished and hence continually evolving [30]. Furthermore, the authors believe that the video materials for the presentation of visumes will continue to evolve. HR processes are changing on daily level and are using a video instead of face to face interviews on daily level. As a confirmation of this statement we can point to new software trends in field such as Skype Interviews that is becoming essential Skype app for recruiters, primarily because of live code execution, syntax highlighting and in-browser group call all integrated in one tool to help candidates and recruiters. It seems logical that this will be the next step of evolution for the services such as a visume.

Pondering upon the global trends in the area of the professional digital showcase and our contributions and efforts to meet them we may conclude that we have embarked on the motorway we are not allowed to exit if we want to lead our students in the direction of opportunities for their future employment. Since the aim of the paper was to set the foundation for a never-ending showcase of IT students and future graduates as well as the directions and guidelines for the path to be followed in order to successfully and purposefully complete their online profile, we would like to draw several conclusions.

## 6. Conclusion

This study adds to the body of knowledge around e-portfolio confirming one more time its value and many benefits. The respondents agree that developing an e-portfolio on an online platform contributes greatly to the student's personal and professional growth enabling potential employers to get a direct insight into applicants' core knowledge and competences. LinkedIn has also proven to be really important to the respondents as tool that provides high visibility in the labour market. LinkedIn in the literature is frequently tackled from the point of its users who have already graduated and not as student users. The findings confirm the stand LinkedIn should be addressed much earlier before graduation. The unexpected findings relate to the

Visume. Although Visume contributions has not been recognized at the same level as e-portfolio and LinkedIn, we still strongly believe that the video-recorded self-presentation in English activates loads of thinking processes on the best way to complete this task. The respondents see it relevant but not so much in the light of the presentation of hard skills but soft skills.

The conducted research, based on a short questionnaire, has made its contributions to professional showcase notion. There are several contributions the authors find valuable. The main contribution of the paper is the deployed methodology of e-portfolio development, its connection with practical and corresponding assignments in English language courses and final consolidation with LinkedIn account altogether implemented in the curriculum. In this manner, the students earn points actively working and creating their piece of work, supervised and guided by their professors, they reflect on their knowledge, skills and competencies for the visume and present them in English, they make their LinkedIn account in English and learn how to connect all the data in one representative showcase that makes them more competitive in the labour market. Currently, IT is the profession with the highest demand growth in the market and the growth of new professions in the field. Presenting the methodology how to make this population more visible in the market, during the course of their studies, is definitely a notable contribution in the job searching skills palette.

Presented research may tackle the percentage of the employed students who have followed the directed path, we have provided for them, as well as the job positions they have occupied. Furthermore, a qualitative approach to the implemented methodology can be employed too as well as new sources of information included—the employers and the teaching staff.

*Acknowledgments*—This work was supported by the Ministry of Science and Technological Development of the Republic of Serbia through the project TR32054 and III44006.

## References

1. J. V. Dick and T. Poell, Social Media and the Transformation of Public Space, *Social Media Public Space*, **1**(5), pp. 1–5, 2015.
2. LinkedIn. <https://www.linkedin.com/company-beta/1337/>, Assessed 15 August 2017.
3. A. Rizwan, A. Demirbas, N. A. Hafiz and U. Manzoor, Analysis of Perception Gap between Employers and Fresh Engineering Graduates about Employability Skills: A Case Study of Pakistan, *The International Journal of Engineering Education*, **34**(1), pp. 248–255, 2018.
4. M. J. Reimer, Communication Skills for the 21st Century Engineer, *Global Journal of Engineering Education*, **11**(1), pp. 89–100, 2007.
5. P. Petrone, *The World's First Resume is 500-years Old and Still Can Teach You a Lesson or Two*, <https://business.linkedin.com/talent-solutions/blog/recruiting-humor-and-fun/2015/the-worlds-first-resume-is-500-years-old> Assessed on 15th January 2018
6. S. Vertovec, Super-diversity and its implications, *Ethnic and Racial Studies*, **30**(6), pp. 1024–1054, 2007.
7. H. Sylva and S. T. Mol, E-recruitment: A study into applicant perceptions of an online application system, *International Journal of Selection and Assessment*, **17**, pp. 311–323, 2009.
8. A. M. Hiemstra, E. Derous, A. W. Serlie and M. P. Born, Fairness Perceptions of Video Resumes among Ethnically Diverse Applicants, *International Journal of Selection and Assessment*, **20**(4), pp. 423–433, 2012.
9. A. Gissel, L. Thompson, S. Pond and A. Meade, A Theory-Driven Investigation of Prospective Applicants' Intentions to Submit Video Résumés. *Proceedings of 26th Annual of the Society for Industrial and Organizational Psychology Conference*, Chicago, Northern Illinois University, pp. 2449–2461, 2011.
10. R. Forrest, *Digital transformation in the age of customer*, Forrester Consulting, <https://www.accenture.com/acnmedia/Accenture/Conversion>—Assessed on 16 November 2016, p. 2
11. N. Anderson, Perceived job discrimination: Toward a model of applicant propensity to case initiation in selection, *International Journal of Selection and Assessment*, **19**, pp. 229–244, 2011.
12. A. M. Ryan and R. E. Ployhart, Applicants' perception of selection procedures and decisions: A critical review and agenda for future, *Journal of Management*, **26**, pp. 565–606, 2000.
13. Loft Resumes, <https://loftresumes.com/> Assessed on 22 December 2016.
14. A. Doyle, Information Technology (IT) Resume Tips and Examples, <https://www.thebalance.com/information-technology-it-resume-examples-2063601> Assessed on 15 August 2017.
15. T. Chaudhuri and B. Cabau, *E-portfolios in Higher Education*, Singer Nature Singapore, Hong Kong, 2017.
16. A. Alexio and F. Paraskeva, Enhancing self-regulated learning skills through the implementation of an e-portfolio tool, *Procedia—Social and Behavioral Sciences*, **2**, pp. 3048–3054, 2010.
17. B. Banks, *E-Portfolios: Their Use and Benefits*, FD Learning Ltd., Sheffield, <http://www.eife-l.org/publications/eportfolio/documentation/doc/fd> Accessed 5 July 2017.
18. J. F. Lozano, P. A. Boni and A. Hueso, Competencies in higher education. A critical analysis from the capabilities approach, *Journal of Philosophy of Education*, **46**(1), pp. 132–147, 2012.
19. C. Ladds, E-Portfolios and History Teaching, in T. Chaudhuri and B. Cabau (Eds), *E-Portfolios in Higher Education*, Singer Nature Singapore Ltd., Hong Kong, pp. 75–88, 2017.
20. M. Pegrum and G. Oakley, The Changing Landscape of E-Portfolios: Reflections on 5 Years of Implementing E-Portfolios in Pre-Service Teacher Education. In T. Chaudhuri and B. Cabau (Eds), *E-portfolios in Higher Education*, Singer Nature Singapore, Hong Kong, pp. 21–34, 2017.
21. M. Moretti and M. Giovannini, E-portfolios as a jobseeking tool for universities, *Journal of Perspectives of Economic, Political and Social Integration*, **17**(1–2), pp. 87–104, 2011.
22. M. W. Eugenia, R. H. Shroff and C. Ping Lim, Applying a Modified Technology Acceptance Model to Qualitatively Analyse the Factors Affecting E-Portfolio Implementation for Student Teacher's in Field Experience Placements, *Issues in Informing Science and Information Technology*, **10**, pp. 354–364, 2013.
23. E. Y. Wong, T. F. Kwong and P. F. Lau, Using Student ePortfolios to Showcase Students' Learning: Experience from Hong Kong Baptist University in C. Tushar, & B. Cabau (Eds), *E-Portfolios in Higher Education*, Springer Nature Singapore Pte Ltd., Hong Kong, pp. 157–170, 2017.
24. E. Y. Wong, T. F. Kwong and P. F. Lau, Using Student ePortfolios to Showcase Students' Learning: Experience from Hong Kong Baptist University in C. Tushar and B. Cabau (Eds), *E-Portfolios in Higher Education*, Springer Nature Singapore Pte Ltd., Honk Kong, pp. 157–170, 2017.

25. L. Lee, Using portfolios to develop L2 cultural knowledge and awareness of students in Intermediate Spanish, *Hispania*, **80**(2), pp. 355–367, 1997.
26. P. W. Cummins and C. Davesne, Using electronic portfolios for second language assessment, *Modern Language Journal*, **93**, pp. 848–867, 2009.
27. M. Syamsul Nor Azlan, M. Amin Embi and N. Mohd Nordin, Designing E-Portfolio with ARCS Motivational Design Strategies to Enhance Self-Directed Learning, *Higher Education Studies*, **6**(4), pp. 138–145, 2016.
28. J. Keller, Motivational design of instruction in C. M. Reigeluth (Ed), *Instructional-Design Theories and Models: An overview of their current status*, Lawrence Erlbaum, Hillsdale, NJ, pp. 386–434, 1983.
29. Z. Papacharisi, The virtual geographies of social networks: a comparative analysis of Facebook, LinkedIn and ASmall-World, *New media & society*, **11**(1&2), pp. 199–220, 2009.
30. J. Dijck, Facebook as a Tool for Producing Sociality and Connectivity, *Television and New Media*, **13**(2), pp. 160–176, 2012.
31. B. Bates, Framing media economic policy: A social economic approach, *8th World Media Economics Conference*, Lisbon, May 2008.
32. CEFR. Education and Languages, Language Policy. [http://www.coe.int/t/dg4/linguistic/Source/Framework\\_EN.pdf](http://www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf) Accessed 17 July 2016.
33. Business English for IT Students, <http://predmet.sinergija.edu.ba/mod/folder/view.php?id=516> Accessed on 1 August 2017.
34. T. Dabić, *The Needs of Information Technology Students in English Language Teaching in Serbia*—unpublished Ph.D. dissertation, Novi Sad: The Philosophical Faculty, University of Novi Sad. 2016, <http://nardus.mfn.gov.rs/bitstream/handle/123456789/5432/Disertacija2672.pdf?sequence=2&isAllowed=y> Accessed on 15 February 2018.
35. N. Grunwald, Que vadis German engineering education, *Asia-Pacific Forum on Engineering Technology*, Sydney, Australia, pp. 371–374, 1999.
36. C. Petter, *Needs Analysis Comparative Report—including Country Reports on the Needs of IT-Students and IT-Professionals*. Austria: Education and Culture, retrieved from <http://www.english-it.eu/uploads/wp1/EIT%20-%20NA%20Report%20proofread.pdf>. Accessed on 2 July 2014.
37. H. P. Jensen, Strategic planning for the education process in the next century, *Global Journal of Engineering Education*, **4**(1), pp. 35–42, 2000.
38. A. Churches, *Bloom's Taxonomy*, <http://thesecondprinciple.com/teaching-essentials/beyond-bloom-cognitive-taxonomy-revised/> Accessed on 15 January 2016.
39. M. Nikolić and T. Dabić, The Bloom's Taxonomy Revisited in the Context of Online Tools. *The Proceedings of International Scientific Conference Sineteza on ICT and E-Business Related Research*, Singidunum, Belgrade, pp. 315–320, 2016.
40. T. Dabić, Useful Online Resources and Educational, *The Proceedings of University Scientific Conference*, Sinergija, Bijeljina, Bosnia and Herzegovina, pp. 67–71, 2016.
41. C. Roberts, Blooms Digital Taxonomy Pyramid, Accessed on January 2016, Is Digital Learning World: <http://digitallearningworld.com/blooms-digital-taxonomy-pyramid>, Accessed on 18 April 2016.
42. N. Suzić, *Animiranje studenata u univerzitetskoj nastavi*, Fakultet poslovne ekonomije, Banja Luka, 2005.
43. N. Belling, *Nick Belling Video Resumé CV*, <https://www.youtube.com/watch?v=a2L9DGEUtNg>, Accessed on 14 March 2013.
44. J. D. Brown, *Using surveys in language programs*, Cambridge University Press, Cambridge, 2001.
45. A. Mackey and S. M. Gass, *Second Language Research: Methodology and design*, Lawrence Erlbaum Associates Publishers London, 2005.
46. E. R. Cohn and B. J. Hibbitts, Beyond the Electronic Portfolio: A Lifetime Personal Web Space, *Educause Quarterly*, (4), pp. 7–10, 2004.
47. D. Fincher, (Director). *The Social Network* [Film]. 2012 <https://www.imdb.com/title/tt1285016/>

**Tijana Dabić** is an Assistant Professor at Faculty of Philology at Sinergija University in Bijeljina in Bosnia and Herzegovina. Tijana Dabić has earned both her MS and BS in English Language and Literature at the Department of Anglistics at the University of Novi Sad in Serbia. She earned her PhD in Teaching Methodology at Department of Pedagogy of the University of Novi Sad. Her primary interest focuses on English for Specific Purposes, especially for IT population, since she has been working as ESP teacher for ten years and defended her PhD Thesis titled *The Needs Analysis of IT Students in ELT at IT Departments in Serbia*. She maintains a strong interest in researching the area of ESP via qualitative methods, especially grounded theory techniques. Her research also focuses on digital literacies and digital fluencies, the development of online courses and materials, the application of higher-order thinking skills in the teaching and learning process, task-based teaching and business communication psychology.

**Saša Adamović**, PhD is an assistant professor at Singidunum University. His areas of expertise are Computer Security, Cryptology, Biometrics, Crypto Biometrics, Theory Information and Coding and Digital Forensics. He is certified in administration and database field by many major IT companies such as Google, SAP, IBM, HP and Oracle.

**Radmila Suzić**, PhD is an assistant professor at Singidunum University. Her primary field of interest is Applied Linguistics, and she has a doctoral degree in Methodology of English Language Teaching where she has published more than 20 scientific papers. She has been teaching English as a Foreign Language at the Singidunum University at the level B2–C1, with the special focus on English for Specific Purposes at the following study programmes: Information Technology, Software Engineering, Business Economy.

**Marko Šarac**, PhD is an assistant professor at Singidunum University. His areas of expertise are: Informatics and computing, Electrical engineering and computing, E-Business, Internet marketing and advertising. He is Head of IT department on Singidunum University from November of 2006. He is certified in administration and database field by many major IT companies such as Google, Cisco, SAP, IBM, HP, Solidworks, Oracle.