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Lifelong learning
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Teaching methods and programs

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Dear E-mentor readers,

We are thrilled to observe that our efforts to publish E-mentor journal in English has met such a great interest. That is the fourth edition of the journal prepared and published within the scope of a grant funded by the Polish Ministry of Science and Higher Education. We do hope to be able to continue the project of issuing the international version of E-mentor in the following years as it has proved to be a success.

In the current edition, one may distinguish two main directions of consideration. The first one refers to the role of information and communication technologies both in education and in business. The latter reflects the challenges that the logistics industry faces nowadays due to the 'disruptive' role of IT. Sensors, robots, automation, cloud computing, data analysis, 3D printing, autonomous vehicles, artificial intelligence, digital twins or blockchain technology are the examples of disruption mentioned by the author of the paper.

Concerning the university, IT appears in the context of adaptive learning and its advantages analyzed by the team of the authors from the University of Central Florida and the Colorado Technical University, with Professor Charles Dziuban as a leader. IT is also present in the papers concerning foreign language learning by the use of videoconferences, instant messaging apps, and international collaboration tools. The concept of professional development through the online course is another example of using IT for academic purposes. Last but not least, is the proposal of an app aimed at eliminating the accessibility barriers, in this case – in Art education.

The second direction of considerations in this edition is university education in general; starting from the strategy of the university in the context of its social responsibility, through the analysis of choices of the university candidates to the concept of the University of Third Age. We do hope that you will find these papers an exciting reading.

In 2019 we plan to continue issuing E-mentor journal in English. Researchers and teachers from HE institutions interested in publishing with E-mentor may refer to the brief guide for authors presented on the last but one page of the journal. More detailed instructions and the submission form one can find online at http://www.e-mentor.edu.pl/eng/page/8/Info_for_Authors.

Maria Zając
Editor

Ministerstwo Nauki i Szkolnictwa Wyższego

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University Social Responsibility Strategies

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As the social responsibility notion developed, it caught the interest of not only businesses but also other organizations, including universities. Drawing from various experiences, they began to create their own strategies in this respect. The objective of the article is to explore the relatively new phenomenon of universities creating formalized social responsibility strategies. Although far from being a mass-scale phenomenon (only a small percentage of universities have developed such strategies so far), it already has a global range (the strategies are created by universities on various continents). The research problem addressed in this article involves diagnosing whether the phenomenon of creating university social responsibility strategies is becoming more commonplace, as well as identifying the emerging variants of such strategies and how they are related to the general development strategies of universities.[1]

The concept of activities going beyond the personal, egoistic interest of an individual or the group to which the individual belongs and of considering the interest of the whole community in which the individual or group functions in such activities has accompanied the humanity since the dawn of time. The roots of such conduct may be sought in biological determinants analyzed from the perspective of evolutionary psychology or in axiology, and the rules that lay the foundations for the oldest religious systems, or perhaps in the economic benefits described both in the literature in this field and in the literature devoted to management science. Management is an area that has been the most committed to taking a wider social interest into consideration, in the context of not only the actions of single individuals or their informal groups but also of entire organizations. This commitment can be found in the development of such concepts as: corporate social responsibility (CSR), corporate social responsiveness, corporate social performance, corporate citizenship or sustainable development.

The notion of corporate social responsibility is considered to have originated as an object of scientific deliberations in 1953, when the book *Social Responsibilities of the Businessman* by Howard Bowen came out. For over half a century, businesses were the main – if not the only – area of interest for CSR researchers. In time, however, the interest started to extend to other entities, including universities. As their strategies failed to account for social responsibility activities, they were not treated as subjects worth studying for quite some time. That element was missing in university strategies largely because of the implicit assumption that such organizations are socially responsible *per se*. However, this approach has been changing over the past few years.

The objective of the article is to explore the institutionalization of university social responsibility and to identify the strategies that are being adopted in this respect. Social responsibility is understood in the spirit of the Erfurt Declaration – as a commitment to play a central part in *the identification of social and economic needs and in helping to meet these needs* (The Erfurt Declaration on University Autonomy, 1996, p. V). One might adopt a thesis that due to the growing interest in this issue on the part of universities from various countries, more and more universities introduce social responsibility strategies, which in turn results in their diversity.

The article consists of three parts. The first part presents various research trends in studies related to organizational social responsibility. Such trends emerged based on corporate social responsibility research, as it was the discussion about the scope of such responsibility that triggered the development of the concept as a whole. The presentation of such trends makes it possible to illustrate how the deliberations on university social responsibility fit into that research. After the overview of the wider background, the subsequent part introduces the results of the author's studies on the proliferation dynamics of the active approach to the implementation and communication of various social responsibility activities among uni-

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versities. The geographic distribution of universities involved in such activities is also presented. The final part of the article includes the results of in-depth studies that depict how the scope of social responsibility strategies differs from university to university and how these strategies are related to the general development strategies of particular entities.

Development of the concept of organizational social responsibility

Initiated in the 1950s, the organizational social responsibility research focusing on entities from the business area has always been, and continues to be, diverse. The range of the issues covered has evolved, which resulted in various research trends (Maignan, Ferrell, 2004, p. 4). The initial discussion centered on the attempts to establish the boundaries of the area of social responsibility. The supporters of restricting this responsibility to the performance of mainly economic obligations (Levitt, 1958, pp. 41–50; Friedman, 1962; Friedman, 1970, pp. 32–33) clashed with those who advocated extending the concept beyond that sphere (Frederick, 1960, pp. 54–61; McGuire, 1963; Davis, 1973). Despite numerous proposals (Carroll, 1979, pp. 497–505; Carroll, 1991, pp. 39–48; Elkington, 1997), it seems that such limits cannot be set in a way that is fixed and universal. Their nature is rather temporary and specific – they are dependent on the evolving social attitudes determined by cultural reassessments and are connected with the dominant expectations towards a particular organization that prevail in societies at specific stages of their development. This is also applicable to universities, as the expectations towards them started to go beyond education and research (Etzkowitz, 2008; Puukka, 2008).

The new impulse in social responsibility research took form in the 1990s in connection with the growing popularity of the stakeholder theory (Freeman, 1984). Although the view that such responsibility means balancing the interests of various groups can already be found in the 1970s literature (Johnson, 1971), it was not until the stakeholder category had been introduced and became commonplace that a research trend focusing primarily on establishing the recipients of social responsibility activities developed. The crucial question that was asked was no longer 'what are organizations responsible for?' but 'to whom are they responsible'? – to the whole society or just to their stakeholders? The supporters of the latter option argued that responsibility to society as a whole is too broad and as such becomes an abstract notion (Clarkson, 1995, p. 92). Referring to stakeholder categories, identifying them, responding to their expectations and striving to balance the interests of various groups are yet another important aspect in the analysis of university social responsibility (Leja, 2008; Tetrevova, Sabolova, 2010, pp. 224–233; Geryk, 2010).

The trends presented thus far have focused on social responsibility primarily in the context of the relationship between an organization and the environment. And this responsibility can also be approached in relation to other aspects and intra-organizational areas of activity. For example, there is a trend of exploring the ethics-based endogenous factors that encourage organizations to engage in socially responsible conduct. It is assumed that socially responsible conduct of an organization is the outcome of its members appropriate and moral choices dictated by the organization's standards in this respect rather than an effect of their commitment to perform the obligations towards the whole society or single stakeholder groups. The organizational culture, including the system of values it is based on, is believed to play a crucial role in the development of ethical standards (Jones, 1995, pp. 404–437). As far as universities are concerned, the issue of ethics is usually analyzed in two contexts. First – as the application of moral values in the relations between universities and their stakeholders (both internal and external) or in a broader sense – as the professional ethics of academic teachers and scholars that arise from the ethos of those professions. Secondly – as a university subject and a field of study (Davis, 1999, pp. 43–195).

The intra-organizational perspective is present not only in the ethics trend but also in the management trend, which is a trend primarily preoccupied with finding the model for combining social responsibility with the general strategy of the organization (Gazzola, Colombo, 2014, pp. 331–338) and with finding a method of implementing social responsibility principles that would define how the organization may or should put those principles in practice. In the case of the latter, there are various standards supporting the implementation of social responsibility in organizations, such as: ISO26000, AA1000 standards, the SA8000 standard or GRI guidelines for sustainability reporting. There are also international and national initiatives that promote following those principles. Those are usually: The OECD Guidelines for Multinational Enterprises (www.oecd.org), the Caux Round Table Principles for Business (www.cauxroundtable.org), or the UN Global Compact (www.unglobalcompact.org). The following apply to universities: The Erfurt Declaration on University Autonomy, 1996, the Talloires Declaration (ulsf.org) and the Principles of Responsible Management Education (PRME) developed within the UN Global Compact (www.unprme.org).

In recent years, the integrative trend has been gaining significance in organizational social responsibility research and discussions. Its representatives are strongly convinced that the existence of social or environmental problems should be approached through the market opportunities that emerge in connection with solving such problems (Drucker, 1984, pp. 53–63; Prahalad, 2004; Porter, Kramer, 2006, pp. 78–92; Porter, Kramer, 2011, pp. 62–77). Engaging in pro-social activities is in this context a way of seeking new opportunities, so far undiscovered. Such view is characteristic of some entities operating in the business area and has not been popular with universities so far, despite the fact that a vast

majority of universities are non-public entities that strive to generate profit though their presence on the education market. However, the university social responsibility literature already has first publications that can be considered as representing this research trend (Karwowska, Leja, 2018, pp. 1–11).

The presented heterogeneity of the organizational social responsibility research areas is a proof of the maturity of the concept. That maturity is also confirmed by the growing circle of entities interested in that concept, declaring themselves ready and willing to engage in activities that would signal their high social responsibility level. Initially, social responsibility was a concept that concerned only business entities, but in time it became employed by other organizations too, including universities.

Growing interest of universities in creating and communicating a social responsibility strategy

The universities' growing interest in including social responsibility activities in their development strategies, or even in creating separate strategies in that area, is determined by various factors. They include:

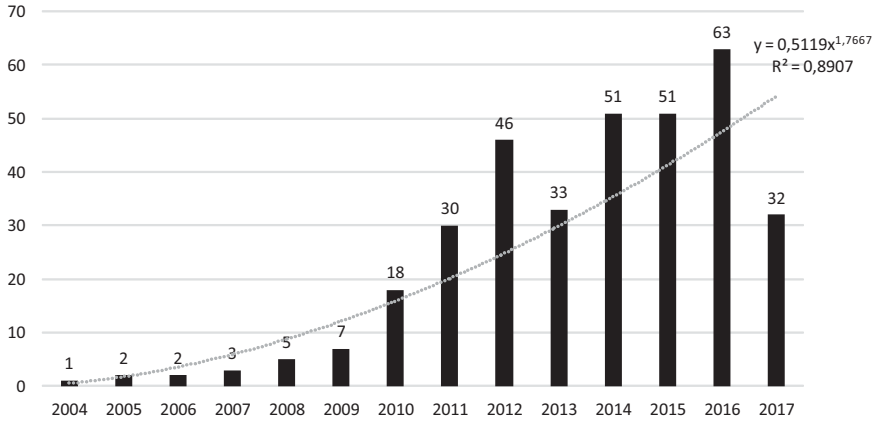
- the growing popularity of social responsibility and its active promotion within international initiatives and organizations, such as the UN Global Compact or the European Union;
- the growing competition on the education market, forcing universities to seek new ways to gain a competitive edge by turning to uncharted territories to reinforce their reputation;
- the expanding and thickening network of university stakeholders, whose assessment and the related support (or lack thereof) becomes crucial for the conditions in which those entities function (the growing expectations of accrediting institutions in terms of organizational social responsibility are a part of that phenomenon);
- the growing gap between the education models and the market need for new skills, including skills related to the development of organizational social responsibility policies;
- the growth of universities and their campuses in terms of size – resulting in considerable consumption of resources, such as energy and water, by those entities and thus their growing environmental impact (and growing awareness of the university in this respect).

Universities are becoming increasingly interested in the impact that the development of their own social responsibility strategies has on the way they are perceived, as evidenced by their increasing activity in communicating social responsibility strategies, measures and performance. In such communications, universities build on the experience of businesses, using similar tools, such as non-financial reports and university websites with separate tabs dedicated to the activities that signal the university's social responsibility. To capture the growth dynamic of universities' interest in social responsibility, a study was conducted to analyze a GRI database (www.globalreporting.org) subset with social responsibility and sustainable development reports[2] filed by universities, using appropriate temporal and territorial filters. The assumption was that the fact that such a report has been prepared, published and uploaded to the database is a good measure of a university's social responsibility activity. The approach differs from the case study method often applied in university social responsibility research (Hill, 2004, pp. 89–100; Vasilescu et al., 2010, pp. 4177–4182; Metha, 2011, pp. 300–304; Karwowska, Leja, 2017, pp. 4–13) as it permits observing the changes from a quantitative perspective. The results confirmed the increasing interest of universities in developing, implementing and communicating a social strategy and in the proliferation of the information about the results of such strategies. This is illustrated by the data in Figure 1.

The first university report was recorded in the GRI database in 2004 – it was a report by Universidad de Santiago de Compostela. Up until 2007, all database reports of educational institutions were prepared by European universities. The first report of an American university (University of Massachusetts Dartmouth)

[2] While explaining the relationship between social responsibility and sustainable development, we must note that these concepts initially developed concurrently. However, it quickly became obvious that social and economic problems are correlated with environmental problems so the trends merged, leading to the interchangeability of the terms. In 2010, the ISO26000 standard ultimately stated that social responsibility focused on an organization and pertained to its responsibility to the society and the environment, and the primary objective of the concept was to maximize corporate contribution to sustainable development to provide stable and lasting conditions for the existence of the global society (Polish Committee for Standardization (PKN) 2012, p.21). Since the sustainable development paradigm applies to the macro scale, sustainable development strategies may (and should) be developed by transnational corporations due to their genuine global impact. However, the distinction between sustainable development and social responsibility was not entirely acknowledged by businesses, who were even more confused by the related concepts that emerged in this area (e.g. TBL, CSV or CCI). Ultimately, it were the UN Sustainable Development Goals (2010) that popularized proper understanding of sustainable development. In practice, it is still common belief that all those concepts mean that corporations must be responsible for more than just the economic dimension of their activity. Due to the nature of the studies, which were largely based on reports published by universities, this article treats university social responsibility and sustainable development as one and the same concept, and the terms are used interchangeably. This is because such approach was adopted in the available source materials (non-financial reports and other documents presented on university websites).

Figure 1. The number of universities filing a social responsibility report in the GRI database (2004–2017)

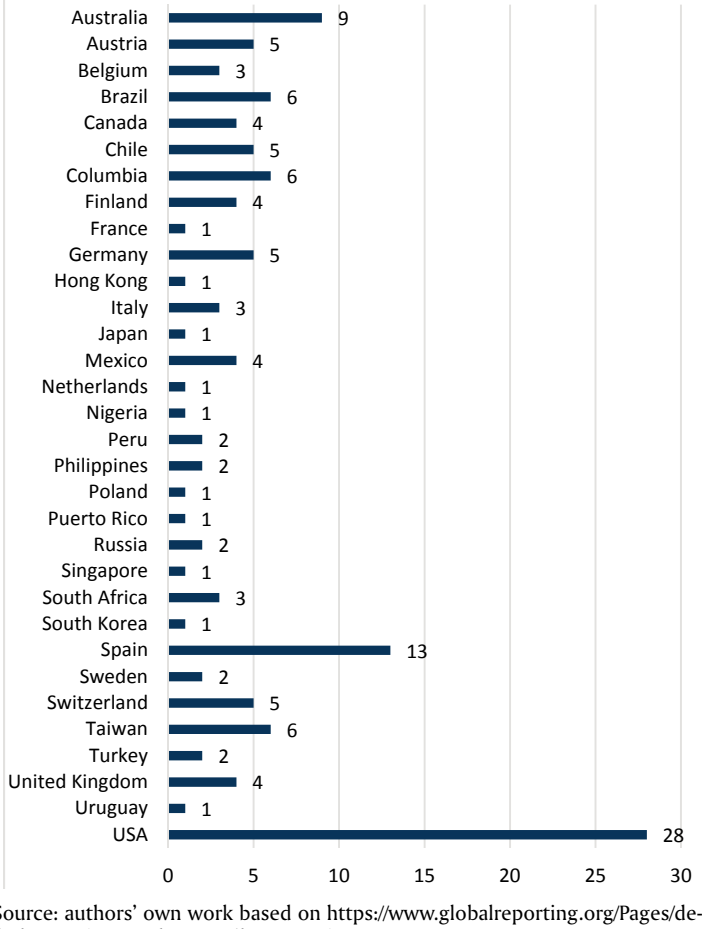


Source: authors' own work based on https://www.globalreporting.org/Pages/default.aspx (access date: April 20, 2018).

and an Australian university (University of Southern Queensland) was filed in 2008. In the next year, 2009, a report published by a university from Latin America (Universidad de Santiago de Chile) was recorded, while reports of two African universities (University of South Africa and University of the Witwatersrand) were submitted in 2010. The last continent to have been represented in the database was Asia, with a report filed by Taiwa Gakuen Education Inc. Kyoto in 2011. While analyzing the entire 2004–2017 period, one may clearly notice that the number of universities communicating their social responsibility strategies, measures and performance was growing. Only in two years (2013 and 2017), the number of reports filed was lower than in the preceding year.

An analysis of the geographic distribution of the universities publishing their social responsibility/sustainable development reports and filing them in the GRI database reveals considerable diversity of the countries of origin. Most universities come from Europe (Spain being the leader) and North America (the United States leading the way). The reporting is also quite popular in Latin America (Brazil being the leader). In Asia, where Taiwan leads the way, and Africa (with the RSA as the leader), such reporting is not very common. Detailed data are presented in Figure 2.

Figure 2. Countries of origin of universities that publish social responsibility reports and record them in the GRI database



Source: authors' own work based on https://www.globalreporting.org/Pages/default.aspx (access date: April 20, 2018).

The GRI database contains social responsibility reports of a total of 133 universities from 32 countries. The only Polish university unit that filed its report was the Department of Computer Science and Communications of the University of Economics in Katowice.

We may want to ask ourselves why it is American universities that lead the way in social reporting, and in Europe – Spanish universities. When it comes to the USA, this might be unsurprising as the country is

the fastest in adopting new trends or ideas. Besides, the USA is the place where corporate social responsibility originated and where transparency is considered to be a matter of great importance. In turn, the social reporting initiatives of universities from Spain and Latin America may be culturally motivated. Organizations in countries where relationship building is considered more important – pro-partnership and polychronic cultures (Gesteland, 2000, pp. 18,58) – may be more prone to recognizing social responsibility as a constitutive element of their functioning. This issue may be addressed at a further stage of researching the university's social responsibility. Moreover, another aspect should be noted. Some universities introduce social responsibility principles to their strategies (in various forms) but do not publish reports. This may be the outcome of a still prevalent belief, as has been already mentioned, that universities are socially responsible by nature. In this context, we may ask: what guides the universities that decide to institutionalize the reporting process? This is yet another research area worth exploring.

Social responsibility strategy versus the university development strategy

Universities that create university social responsibility strategies (USRS) and communicate them both within and outside the organization are completely free to define the scope of such strategies in relation to their general development strategies. To examine how various universities set the frameworks of their social responsibility strategies and how they position both strategy types against each other, we analyzed the content of the reports available in the GRI database and of the websites of the universities that publish those reports. This involved primarily reports created in English in accordance with the latest GRI guidelines (version G4). The analysis additionally covered selected reports developed based on the previous versions of the GRI guidelines as well as reports created without any reference to those guidelines. Furthermore, an overview of the reports and websites of the top ten universities from the World University Ranking 2018 by *Times Higher Education*[3] was conducted. Social responsibility and sustainable development reports, as well as websites of universities, are quite common sources of information about the social involvement of those entities (Nejati et al., 2011, pp. 440–447; Dagiljene, Mykolaitiene, 2015, pp. 586–592). They are accepted and their use is encouraged also by authors who use other sources (Karwowska, Leja, 2018, pp. 9–10). Our analyses show that entities from Europe and North America (mostly the United States), that is regions were such reporting is the most common, generally differ in their approach to university social responsibility strategy. European universities have a broad understanding of this strategy and use it to address various aspects of their social responsibility, while American universities focus mostly (and in many cases – only) on issues related to the natural environment and on limiting the negative environmental impact of the campus.

In addition to that general trend, we identified seven more specific models reflecting the differences between the universities in terms of their approaches to their social responsibility strategies and in terms of the relationship between such strategies and the development strategies. Those are:

- Model 1 – the university social responsibility strategy is a component of its general development strategy; sustainable development elements are incorporated in the latter but they do not form a separate segment thereof; such an approach was adopted for example at Deakin University (2016) or ETH Zürich (2017); the latter identified four areas (research, education, campus and dialogue) for the development of social responsibility initiatives within the general strategy of the university;
- Model 2 – the social responsibility strategy is included in the general development strategy of the university but forms a distinct part thereof; the solution is applied, e.g. by the ESADE Business School (2016) or The University of Melbourne (2016); at the former, the social responsibility policy covers the following areas: teaching, research, social debate, ESADE community, institutional policies, environmental responsibility, institutional social activities, transparency and accountability, and at the latter the sustainable development policy includes only three areas: organizational, financial and environmental & social;
- Model 3 – social responsibility strategy as a standalone document of the same importance as the general development strategy of the university; the solution is applied, e.g. at the Ghent University (2016) or the Nanyang Technological University (2016); the social responsibility strategy of the former consists of the following elements: including organizational units and their members in the implementation and promotion of sustainable development, integrating sustainable development with research and services, and implementing it in university management; the social responsibility strategy of the latter lists the following areas: the campus (mostly in the context of its impact on the natural environment), sustainable education and research, and social involvement;
- Model 4 – social responsibility strategy as a standalone document but subordinate and auxiliary to the general development strategy of the university; such an approach was adopted, e.g. at the University of Plymouth (2016), where

[3] https://www.timeshighereducation.com

financial sustainability was the goal and it was to be achieved through sustainable development of teaching and scientific research and sustainable operating activities of the university;
- Model 5 – social responsibility strategy as a standalone document but superior to the general strategy from which it stems; such a solution is applied, e.g. at the Aalto University (2017), which, just as the University of Plymouth, focused on sustainable development of teaching, research and the operating activities of the university;
- Model 6 – social responsibility strategy as a standalone document but limited to one sustainable development aspect only, i.e. the impact of the university (its campus) on the natural environment; such an approach was adopted for instance by Caltech (2017);
- Model 7 – a social responsibility strategy applied to one of the university units (department) rather than to the whole university; such a solution was adopted by the Department of Computer Science and Communications of the University of Economics in Katowice (2014); the areas included in the social responsibility strategy for that unit were: high usefulness of the research conducted within the collaborative network, high quality of teaching developed based on inter-sectoral cooperation, good organization of an institution supporting its staff and a recognized brand built based on the commitment of the department community.

An issue that is worth exploring in the context of the above seven models are the factors that contribute to the decision to develop and implement a social responsibility strategy at a university and the factors that determine the nature of the relationship between the social responsibility strategy and the general development strategy. The place of the social responsibility strategy in the development strategy and the scope of the USRS may be connected with identifying the main problem from the social responsibility area and adopting it as the most significant one from the perspective of the university's impact on its surroundings. This may be also tied to how the authorities of the university see its role in the business environment and to the relationship between issues which are important for business and those which are important for the university. If a university considers itself an equal partner for business, then any issues crucial for the whole economy are also of interest to the university. For instance, if the areas crucial for the economy are issues connected with environmental pollution, then the university will also include them in its strategy as important. However, if the university sees itself as an entity shaping opinions in the business area, thus positioning itself in the hierarchy as an entity defining the directions of activity for business, then its perception of social responsibility may considerably differ from that of business entities, and its scope of activity will differ accordingly. The above issues may be researched further. The authors believe that they are important in the context of the changing education model and the transformation of the management model.

The presented models illustrate the differences between universities which develop their own social responsibility strategies, both in terms of the relationship between that strategy and the general development strategy of the university and in terms of the scope of the issues addressed in the social responsibility strategy. Despite such differences, we may identify certain areas that are characteristic of such strategies and form a kind of canon. Those areas include: teaching – understood in the narrowest sense as including sustainable development issues in the syllabus; research – understood as broadening the knowledge about sustainable development; and operating activities of the university taking into account sustainable development – understood primarily as limiting the negative impact of the organization on the natural environment and reducing the use of its resources. Nonetheless, the literature may present a slightly broader perspective on the scope of university social responsibility – one that goes beyond the areas of teaching, research and operating activity (Esfijani et al., 2013, pp. 271–281; Teneta-Skwiercz, 2017, pp. 613–617).

If we use the presented models as the starting point and synthesize them, we may identify four general approaches adopted by the universities under analysis:
- the first one assumes that the social responsibility strategy is separate from the general development strategy of the university (Model 3, 4 and 5);
- the second one assumes that the social responsibility strategy is incorporated in the general development strategy of the university (Model 1 and 2);
- the third one assumes that the social responsibility strategy is a standalone document, but it is limited to environmental issues only (Model 6);
- the fourth assumes developing a social responsibility strategy for single university units, e.g., departments (Model 7).

Assessment of each of the above models reveals their main strengths and weaknesses. We only assessed the initial three approaches as we believe that a CSR strategy applies by nature to the entire organization. The first approach differs in terms of the relations between the social responsibility strategy and the general development strategy of the entity, with those two types of strategy remaining separate from each other. An indisputable strength of such an approach is that it makes it easier to implement the social responsibility strategy and assign responsibility for the coordination of the activities thereunder to a specific unit in the university structure. It is also easier to monitor goal attainment since this takes place based on measures developed specifically for the USRS. However, it must be noted that separating university social responsibility from the organization's

development directions also has some downsides. It increases the risk that the USRS will serve purely image-building purposes due to the mostly symbolic nature of the activities thereunder as they will be unrelated to the areas significant from the perspective of the university's development.

From the point of view of the full implementation of the university social responsibility strategy, the second approach is the most appropriate. That approach permits incorporating social responsibility measures across all areas of the university's functioning – scientific research, teaching and operating activities. Nonetheless, proper implementation of this approach requires social responsibility knowledge and awareness of both the management and the staff of the university. A potential weakness of the approach is that social responsibility issues may be dominated in the university strategy by other development-related issues. If this is the case, the USRS may be reduced to nice slogans that make the general strategy of the organization sound better.

The third approach, focusing on environmental aspects, may stem from the academic community being highly aware of that area and of the impact it may have on the ecological awareness of other stakeholders. Another aspect which may provide the USRS with such a framework may be the significance of the environmental impact of the university campus or the profile of the university (for instance, life sciences). The third reason for the approach may arise from the experience to date, connected with the failure to include environmental issues in the general development strategy of the university. The primary weakness of the approach is that the university social responsibility is reduced merely to environmental issues (analogically to the cases where sustainable development is reduced to green development, focused mostly on ecological, nature-related aspects).

Before concluding, it should be noted that the approaches presented do not have to be mutually exclusive. They can also be seen as a sign of evolution and adaptation to various evolutionary stages. The standalone USRS approach may prove better for universities at an early social responsibility implementation stage – where the staff and the management are not adequately knowledgeable about social responsibility issues. It will be easier to implement the strategy and coordinate the related activities in such circumstances. As the university gains experience, it may change its approach to one where its social responsibility strategy becomes a component of the general development strategy. This way, social responsibility can be incorporated in each of the university's key areas in a more comprehensive way.

Summary

The social responsibility concept and its application were originally connected with businesses and their social obligations until they evolved into a comprehensive notion covering various organizations, including their internal and external stakeholder relations. Nowadays, social responsibility is associated with economic benefits – it helps building a competitive advantage and in identifying and taking new opportunities to create value for the organization and its environment – in a broad sense of the term.

The growing interest in social responsibility, the increasing competition in the education market and the expanding and thickening university stakeholder network have prompted organizations to create their own USRSs and to communicate the results of the activities thereunder through non-financial reporting. Analysis of the GRI database revealed a clear growth trend when it came to the number of such reports published by universities. However, the global distribution of the reporting universities remains uneven. The United States is the current leader in university reporting, although the first reports from American universities were included in the GRI database as late as in 2008. As far as Europe is concerned, the reporting is the most commonplace in Spain. The factors which have put those two countries at the top of the ranking are certainly worthy of further research.

The USRSs analyses communicated by the universities under discussion confirmed considerable differences between the universities in their approaches to shaping their social responsibility strategies and combining them with their general development strategies. Seven different models were identified in this respect. The majority of them can be grouped into three broader approaches, each having certain strengths and weaknesses. Such diversity may stem from the fact that universities began to prepare their social responsibility strategies relatively recently. Therefore, standards related to the place of such strategies in university development plans, to the areas to be covered by the strategies and to the strategy creation process or communication methods are yet to emerge. Particular universities develop their own solutions by drawing from various standards (e.g., ISO26000) or guidelines, or building on the experience of other organizations, mostly from the world of business, where CSR strategies are more prevalent and have a longer tradition. Last but not least – will such standards develop one day and are they indispensable in the case of universities? Since the authors do not have the answer to this question, they believe that this issue requires further research.

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Abstract

As the social responsibility notion developed, it caught the interest of not only businesses but also other organizations, including universities. The project described in the article aimed at researching how higher education institutions develop their social responsibility strategies. The desk research carried out covered the analysis of GRI database entries where the universities' social responsibility and sustainable development reports are stored as well as the analysis of selected reports and universities' websites. The two main findings of that research are: the growing social responsibility of the universities has been proved, and a vast diversity of the strategies applied was observed. As a result, seven models of creating the university strategy have been identified and described in the paper. In conclusion, we must stress that there are no universal standards regarding the placement of the strategy in the university general development plans, neither its scope, the process of creation nor the way it is communicated.

Keywords: university; social responsibility; social commitment; social responsibility strategy of a university; sustainable development

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Adaptive Learning: Context and Complexity






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This article describes a research partnership between the University of Central Florida and Colorado Technical University, with their common adaptive learning platform provider, Realizeit. The study examines component scores at the two institutions in mathematics and nursing based on a number of Realizeit system metrics. Although the principal components across disciplines and universities remained constant, student scores on those dimensions varied considerably. This indicates that adaptive learning is influenced by context and complexity. The context aspect helps frame student learning regarding knowledge, engagement, communication, and growth as they experience variability from faculty approaches to instruction. Complexity indicates a nonlinear learning pattern for the adaptive process in which the emergent property shows that interactions among the individual elements result in a more realistic model for explaining how students function in contemporary higher education. The authors raise a number of implementation issues for adaptive learning.

Introduction

Adaptive learning (AL) technologies impact higher education by creating responsive learning environments that allow students to accelerate or extend their studies, thereby challenging the usual time constraints in the learning cycle. John Carroll (1963) identified this when he contended that if learning time were held constant, then knowledge, skill and concept acquisition would vary. But, if the constant is some prespecified level of achievement, then learning time will become the variable. In the vernacular of higher education, if you give all students one semester to learn College Algebra, there will be important differences in the knowledge each of them acquires. Determining mastery is a challenging assessment problem, but for the purpose of this paper the authors assume that it is relatively constant. An expanded adaptive model would place no constraints on knowledge acquisition or time, a combination that would impact much of higher education as it currently exists (Creative Destruction, 2014).

Without effective technology, implementing adaptive learning may be daunting because instructors cannot manage the modality without support. Fortunately, that help is available in a number of good functioning adaptive platforms (Dziuban, Moskal, Cassisi & Fawcett, 2016) that:

1. Personalize the educational experience,
2. Customize content,
3. Continually assess student progress.

A number of important questions underlie these three simple components, however:

1. What role does social learning play?
2. What cognitive parameters are involved?
3. How do students behave in the adaptive environment?
4. Can adaptive learning be scaled?
5. What is adaptive learning's impact on access to education?
6. How do students perceive this learning structure?
7. What are the elements of student affect?
8. How is time modified?

Although comprehensive, these elements are by no means exhaustive because higher education contexts vary considerably throughout the world. Because of complexity issues, examining these elements individually will underrepresent adaptive learning.

Taleb (2018) puts it this way:

The main idea behind complex systems is that the ensemble behaves in ways not predicted by its components. The interactions matter more than the nature of the units. Studying individual ants will almost never give us a clear indication of how an ant colony operates. For that, one needs to understand an ant colony as an ant colony, no less, no more, not a collection of ants. This is called the emergent property of the whole by which parts and whole differ because what matters are the interaction between such parts. And interactions can obey very simple rules (p. 69).

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From an operational perspective Forrester (1991) asserts three principles:

1. The impossibility of anticipating how an intervention will ripple through a complex system;
2. Often outcomes will be counterintuitive;
3. There will be unanticipated side effects.

This article addresses these principles in the adaptive learning environment as they impact higher education.

University Collaboration

University of Central Florida (UCF)

The University of Central Florida is one of 12 public universities in Florida's State University System. It is located in Orlando and is the largest in Florida with over 68,000 students. UCF is a Hispanic serving institution with an average age of 24 with 22% of students over the age of 25 (UCF Facts, 2018).

In 2014, UCF began investigating adaptive learning as a means to improve student success. Realizeit is the university's enterprise platform, allowing the faculty control and flexibility over course content (Bastedo & Cavanagh, 2016). A team of Personalized Adaptive Learning (PAL) instructional designers at UCF's Center for Distributed Learning (CDL) provides support and guidance to the faculty as they implement the course design process. Faculty who wish to use adaptive learning participate in a faculty development program (PAL6000) and are assigned an instructional designer who is experienced with Realizeit. The support team provides assistance with the workload of adaptive course creation in order to ensure quality design (Chen, Bastedo, Kirkley, Stull & Tojo, 2017). CDL also provides video, graphics, and technology support as faculty redesign and teach their courses.

Colorado Technical University (CTU)

Colorado Technical University is a for-profit institution providing industry-relevant programs to a diverse student population of approximately 25,000 students. The university began offering online courses in 2000 and now offers over 50 online or blended programs. The older student population has an average age of 36 and is 60% female.

CTU's open enrollment results in students who enter with varying levels of expertise; therefore, the university began investigating adaptive learning in 2012. The flexibility of this approach provides students with unique learning paths that adjust to their varied knowledge and preferences to improve CTU's nontraditional students' online instructional experience. They are introduced to adaptive learning during orientation and, if needed, are provided with help guides and additional training in using the technology. Also, faculty must successfully complete a separate asynchronous training prior to teaching a course with adaptive technology.

Table 1 provides a summary of Realizeit use across the two institutions. The joint use of Realizeit provided CTU and UCF with an opportunity for collaborative research. Although the demographics of both universities vary, the learning analytics provided by Realizeit and a shared student reactions survey allow for common variables to be examined across these demographics. This collaboration has helped inform Realizeit's product development and recognition of customer needs as well as CTU and UCF's research and development in the adaptive learning environment.

The Adaptive Learning Partner: Realizeit

Realizeit is both an adaptive and adaptable learning platform. Institutions can bring their existing courses into Realizeit and make them adaptive or they can build adaptive courses from scratch. The platform is adaptable in that it does not impose a pedagogical approach on the course but can be customized to suit the needs of each instructor, course or institution. The platform supports approaches ranging from competency-based learning to self-directed approaches, as well as various models for learning in corporate settings.

The principle underlying all these strategies in Realizeit is the separation of curriculum from content (Howlin & Lynch, 2014). Traditionally, learning is content driven, with structure dictating the same linear pathway through the material for all students. In Realizeit the curriculum drives the direction of learning and uses content to help students acquire

Table 1. Realizeit adaptive learning use at UCF and CTU

	UNIVERSITY OF CENTRAL FLORIDA	Colorado Technical University
Started with adaptive learning	Fall 2014	Fall 2012
Number of adaptive courses	26 (75 instances)	268 (4,157 instances)
Typical course length	12 weeks (summer) or 15 weeks (fall or spring)	5.5 weeks
Number of students	6,758	132,996
Number of enrollments in courses	7,514	933,154
Enrollments per student	1.11	7.02

Source: data involve cumulative totals provided by Realizeit; correct as of September 27, 2018.

knowledge. The platform defines the curriculum using a hierarchical model known as the Curriculum Prerequisite Network – a directed acyclic graph in which the nodes represent the concepts to be learned, and the boundaries represent the prerequisite relationships that exist between them. Thus, Realizeit creates a map that shows a student many non-linear pathways to move through the concepts.

Just as an instructor can teach a concept in many ways, Realizeit provides multiple pieces of content and resources for each concept in the curriculum. The design is content agnostic – it is applicable in any learning domain and can deliver learning content in multiple formats.

Within Realizeit, the interaction of the learner with both the curriculum and the content generates a comprehensive stream of data that powers the Adaptive Intelligence Engine (AIE). This enables the platform's algorithmic adaptivity, personalization, guidance and feedback. The AIE discovers and adapts to each learner's changing achievement, behavior and preferences following a loop structure described in VanLehn (2006) and du Boulay (2006). It incorporates students' initial baseline results to estimate their prior knowledge. As students progress, additional outcomes enable Realizeit to suggest alternative learning trajectories. This results in continuous updates of students' ability estimates, the knowledge they have acquired, and objectives that still require mastery and recommendations for optimal paths through the course material.

At almost every point in the process, the student has final control over learning and subsequent steps. They may alter their learning path progression (trying new concepts) and alternatively undertake a review (revising/practicing previous concepts). In addition, they have access to supplemental learning material including adding, removing and reordering course elements within the content. However, this is not a completely open landscape for students, but a structured platform provided by Realizeit for optimal learning that allows some flexibility. The platform directs students towards ability-appropriate activities to increase their potential for success.

The courses examined

At UCF, Intermediate Algebra helps develop algebra skills and focuses on students who need remediation prior to enrolling in College Algebra – the primary math general education credit course taken by undergraduate students. Pathophysiology is required for students in the Bachelor and Master of Science in Nursing programs, and addresses abnormalities in physiologic functioning of the human body. All pathophysiology classes have content fully developed in Realizeit. The CTU analog to UCF's Intermediate Algebra is termed Introductory Algebra and provides skills and concepts necessary to succeed in further mathematics studies. Analytic Algebra is a basic algebra course that is specifically required for engineering and information technology students, and focuses on linear, rational and quadratic equations. The CTU Nursing course content includes a change management project pertaining to nursing practice and focuses on leadership skills. The comparison model is presented in Table 2.

The basis for this study

This study augments the 2018 findings of Dziuban et al. (2018), demonstrating that adaptive learning stabilizes the underlying components of several outcome metrics across universities and subject areas. The authors considered several indices produced as students use Realizeit for courses delivered in the adaptive modality at the University of Central Florida (UCF) and Colorado Technical University (CTU): The measures used in that study are presented in Table 3.

To make comparisons of latent patterns in the aligned courses, the authors derived principal component solutions within and across each institution and computed similarity coefficients (Chan, Ho, Leung, Chan & Yung, 1999), finding a high degree of correspondence among components for all disciplines in both universities (average Tucker index=0.92). All student samples with courses combined from each university produced virtually identical results. Table 4 shows a prototypical pattern matrix encountered by the authors.

For every comparison, four components emerged. Pattern coefficients absolutely equal to or greater than 0.30 were used as the criteria for index salience. Those values are identified in Table 4; however, for ease of interpretation they are also listed after each component name in this section.

Knowledge Acquisition (KA): Comprised of the Calculated, Knowledge Covered, Knowledge State, Determine Knowledge and Average Score indices. This component relates to educational achievement and has a mastery element associated with it. Knowledge acquisition in adaptive learning assesses learning prior to, during and upon completion of a course and forms the benchmark for student success. In addition, it serves as the basis for the decision engine's recommendation about the appropriate learning path for students and an early indication of possible difficulties in the learning sequence.

Table 2. CTU/ UCF Course Comparison

CTU	UCF
Introductory Algebra	Intermediate Algebra
Analytic Algebra	College Algebra
Trends in Contemporary Nursing	Pathophysiology

Source: Reprinted by permission from *Online Learning*.

Table 3. Explanation of Variables

Variable	Explanation
Knowledge State (KS)	A measure of student ability. The mean level of mastery that the students have shown on topics they have studied.
Knowledge Covered (KC)	A measure of student progress. The mean completion state of each of the course objectives.
Calculated (CA)	An institution-defined combination of several metrics, mainly KS and KC, used to assign a grade to students.
Average Score (AS)	The mean result across all learning, revision, practice, and assessment activities.
Determine Knowledge (DK)	The percentage objectives on which the student completed a Determine Knowledge operation.
Knowledge State Growth (KSG)	The extent by which a student's KS has changed from the start of the course. Can be positive, negative, or zero.
Knowledge Covered Growth (KCG)	The extent by which a student's KC has changed from the start of the course. Can be positive or zero.
Interactions (IN)	The engagement level of the instructor(s) with the student. The total number of interactions.
Messages Sent (MS)	The number of the interactions sent by the instructor that were simple messages.
Total Activities (TA)	The total number of nonassessment activities started by the student.
Total Time (TT)	The total time spent on nonassessment activities started by the student.
Number Revise (NR)	The total number of node-level activities that are classified as revision.
Number Practice (NP)	The total number of objective-level practice activities.

Source: reprinted by permission from *Online Learning*.

Table 4. Transformed (Promax) Pattern Matrix for the Realizeit Indices, Entire Sample at UCF (n = 1,528)

	Components			
Index	**KA**	**EA**	**C**	**G**
Calculated	**.95**	.04	-.01	.12
Knowledge covered	**.95**	.02	.02	.13
Knowledge state	**.91**	.01	-.10	.02
Determineknowledge	**.79**	-.06	.12	-.21
Average score	**.37**	.02	-.20	-.15
Total activities	-.05	**.97**	-.02	-.09
Num. revised	-.02	**.90**	-.15	.00
Num. practiced	.11	**.61**	.16	-.25
Interactions	-.01	-.02	**.98**	.01
Messages sent	-.01	-.02	**.98**	.01
Knowledge covered growth	.05	-.11	.04	**.93**
Knowledge state growth	-.06	-.05	-.09	**.92**
Total time	-.04	**.30**	.24	.44

Source: the table reprinted by permission from *Online Learning*.

Engagement Activities (EA): Comprised of the Total Activities, Number Revised, Number Practiced and Total Time indices. This component bears a strong relationship to what Carroll (1963) called the time students spend in actual learning and relates to how much energy a student expends in the learning process. If one could hold ability level constant, a reasonable assumption might be that students who are more engaged in learning activities will score higher on knowledge acquisition.

Communication (C): Comprised of the Interactions and Messages Sent indices, communication emerges in the Realizeit platform, enabled by messages sent and interactions. This is the social dimension of adaptive learning and the way students communicate with each other and their instructors. At another level this

component underlies the effort expended communicating during the courses.

Growth (G): Comprised of the Knowledge Covered Growth, Knowledge State Growth and Total Time indices, growth is a clear expectation for any course. Measuring change in student knowledge can result from many baseline measures and is an important element of the learning cycle. Growth is change in what information a student has mastered and is the key bellwether for student progress in their adaptive learning courses.

The methods for this study

Based on the four components and their stability as found in the Dziuban et al. study (2018), the authors have concluded that deriving the component scores for like courses between the two universities would add context to those results. A component score for each student in the study gives an indication of his or her spacing or the degree to which a student relates to each dimension. For instance, a student with a higher score on knowledge acquisition has more affinity for that dimension than a student with a lower score. A student with higher scores on engagement and communication may be more concerned with the class climate rather than knowledge acquisition or growth. This comprises useful information because, although the components are stable, it does not follow that the component scores will reproduce a similar pattern.

The Anderson Rubin (Anderson & Rubin, 1956) component score derivation was used because it is best suited for solutions where the dimensions are correlated to some degree. Most procedures yield unit normal variates with a mean of 0 and a standard deviation of 1. Knowledge acquisition scores were computed for alignment in beginning Algebra, College Algebra and Nursing courses at both UCF and CTU and the procedure was repeated for knowledge growth, engagement and communication. The unit normal scores were linearly transformed to have a mean of fifty and standard deviation of ten (the T score transformation). The score means and standard deviations for courses at each university were derived and tested for significance. However, large sample sizes resulted in high power for those tests, so effect sizes were determined according to the Hedges' g procedure (Hedges, 1982). Values that reached .5 were considered noteworthy, consistent with normally accepted guidelines. Error bar graphs were used to provide a visual model for making decisions about the comparability of the component scores.

Component Score Comparisons

The following analysis examines the mean component scores for each course on each of the 4 components found by Dziuban et al. (2018). Once again, these scores determine, on average, how each course related to each component--how big a role did each component play in the way learning took place? This is not a case of one course outperforming another, indicating that the organization and context of the courses' scores on the components require careful consideration. For example, little or no communication between the instructor and students can result in a low mean score on the communication component. This low score on communication might have several explanations, (e.g., reduced instructor engagement or communication taking place outside of the adaptive platform).

Additionally, scores with a high degree of variability among students within each course were evaluated. Where instructive, the standard deviation of the scores will be discussed. The following tables and graphs provide the component mean score and standard deviation for each course. Although this was a combined university study, all findings for component score levels were disaggregated by individually aligned courses for both universities. The results reflect that separation.

Knowledge acquisition (KA)

Knowledge acquisition is the first principal component, explaining the largest proportion of variance for each of the six courses. This dimension represents a cluster of metrics that capture student progress, ability and grade. The summary statistics for each course on KA are given in Table 5 and Figure 1.

Despite being the first principal component, substantial differences between the course comparison pairs do not result. Each of the CTU courses is higher on KA that their corresponding course in UCF, although none of the effect sizes are noteworthy. The same pattern emerges across both institutions with the Nursing courses relating most highly, followed by the introductory Algebra courses, with the more advanced Algebra courses last. The standard deviations appear relatively similar on each pair of comparisons.

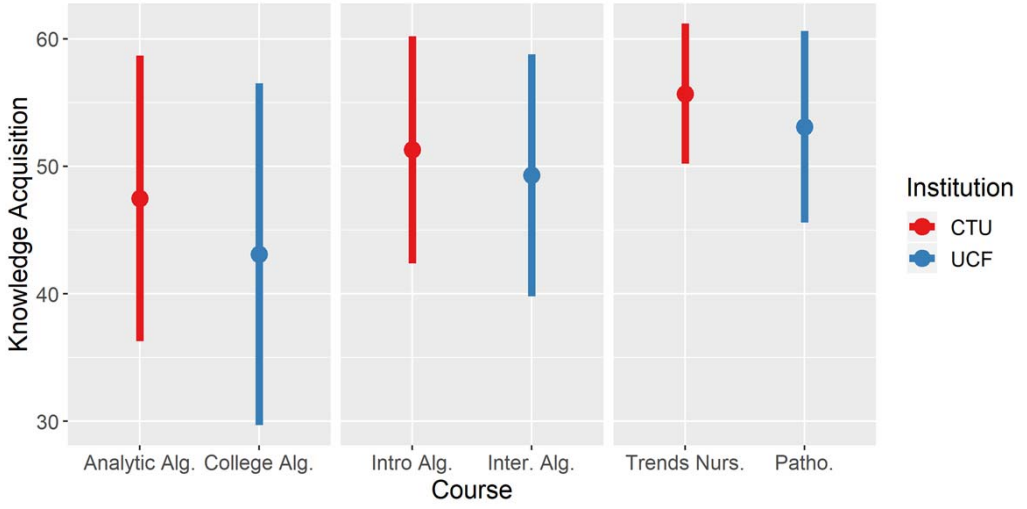
Table 5. Knowledge acquisition analyses

	UCF			CTU				
	n	x	SD	n	x	SD	p	g
Analytic Algebra/ College Algebra	363	43.1	13.4	4,486	47.5	11.2	.00	.39
Intro to Algebra/ Intermediate Algebra	302	49.3	9.5	6,993	51.3	8.9	.04	.19
Trends in Contemporary Nursing/ Pathophysiology	537	53.1	7.5	303	55.7	5.5	.00	.38

Noteworthy effect sizes

Source: authors' own study.

Figure 1. Knowledge Acquisition. The points represent the course mean and the vertical bar represents the ±1 standard deviation from the mean. CTU is represented by red and UCF by blue



Source: authors' own study.

Findings indicated that both Nursing courses show the smallest variability, while the College Algebra courses have the largest variance. Nursing students relate to KA more highly, but measured along these components they are much more like each other than College Algebra students. The reasons for the diminished variance in Nursing courses may be due to the subject matter; nursing students are both highly invested and interested in the content. Students in College Algebra are taking the course as a general education requirement so their interest level and perception of relevance in this course varies. Additionally, because of the narrow discipline focus, nursing students are more likely to have a similar student profile and may be older and further along in an academic program or profession.

Engagement activities (EA)

Engagement Activities represents the second principal component in each of the solutions. It defines the cluster of measures indicating the number of different activities attempted, and time students spent engaged with the learning content. The summary statistics of each course on EA are given in Table 6 and Figure 2.

Each of the paired course comparisons has a noteworthy effect size (> 0.5). College Algebra at UCF relates to this component significantly more than its corresponding course in CTU, Analytic Algebra. Remarkably, there is very little variability among the 4,486 students in this CTU Algebra course. Almost all students relate to this component similarly, meaning the general level of engagement of these students, when measured across a range of metrics, is approximately the same. Some may spend more time and some may do more activities, but it reduces to the same general level of engagement. At CTU similar results may occur because only students pursuing the Bachelor's degree in Information Technology are required to take Analytic Algebra. At UCF however, College Algebra is one of the math courses in the general education program. The majority of undergraduate students take it, resulting in a variety of student demographics and academic interests.

The scores reverse themselves when looking at the Introductory Algebra courses. The CTU course, Introduction to Algebra, relates significantly higher to this component than the UCF course, and while not as low as the previous comparison, the UCF course has small variability. CTU is an open enrollment institution and the average age of students is in the mid-to-late-thirties. The higher level of engagement may be a response, in some cases, to students who have not been exposed to College Algebra for over fifteen years (students are required to take this course unless they successfully complete a college entrance exam–CTU does not require the SAT or ACT). UCF's Intermediate

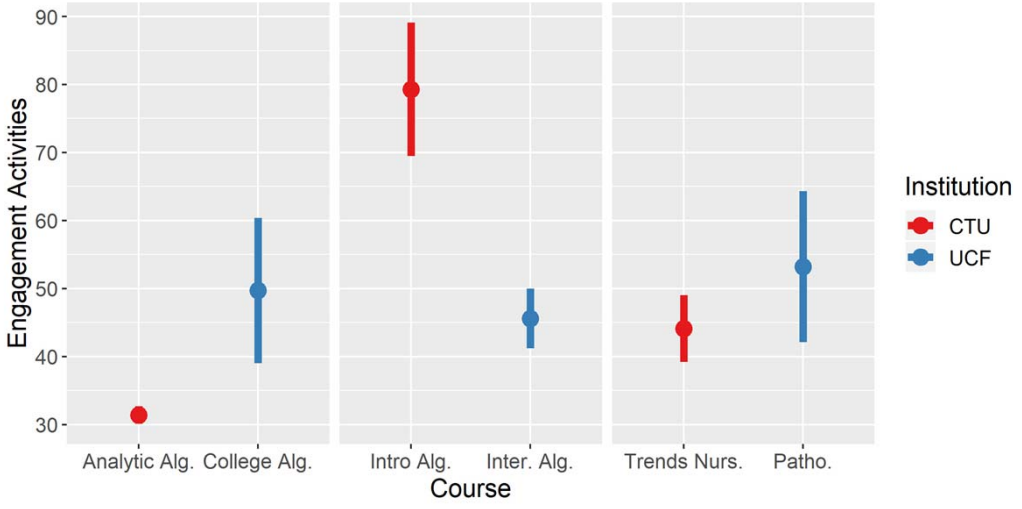
Table 6. Engagement Activities

	UCF			CTU				
	n	x	SD	n	x	SD	p	g
Analytic Algebra/ College Algebra	363	49.7	10.7	4,486	31.4	1.3	.00	5.8*
Intro to Algebra/ Intermediate Algebra	302	45.6	4.4	6,993	79.3	9.8	.04	3.5*
Trends in Contemporary Nursing/ Pathophysiology	537	53.2	11.1	303	44.1	4.9	.00	1.9*

*Noteworthy effect sizes

Source: authors' own study.

Figure 2. Engagement Activities: The points represent the course mean and the vertical bar represents the ±1 standard deviation from the mean. CTU is represented by red and UCF by blue.



Source: authors' own study.

Algebra course is required only by those who fail the math placement exam and does not fulfill the math credit requirement for undergraduates; students must successfully complete it before progressing to College Algebra.

Again in Nursing, the effect size is noteworthy but not as large as the other two comparisons. The UCF course is higher on this component and again the lower course (CTU's), has smaller variability. Some possible reasons for the low levels of variability among students in CTU Analytic Algebra, UCF Intermediate Algebra and CTU Trends in Contemporary Nursing are that in these courses there is a general ceiling effect for the level of engagement that is required from the students. In the UCF course this could be because an artifact of the fact that Intermediate Algebra is essentially a remedial prerequisite course that prepares students for College Algebra but is not credit-bearing. Students may be putting in the minimum level of effort required to complete the course. The relatively short contact time of 5.5 weeks for the CTU courses may also impact results, as there is little time for students to engage in protracted engagement efforts.

Communication (C)

Communication represents the cluster of metrics that captures the level of communication from the instructor to the students; the metric is passive on the student side and mostly dependent on metrics driven by the instructor. The summary statistics of each course for this component are given in Table 7 and Figure 3.

A high score on this component for an individual student may indicate substantial communication from the instructor due to student needs and preferences or instructor communication style; a student might require a higher level of direction from the instructor or remediation, and a strong student might receive extra material--an instructor might prefer to send regular updates.

In the UCF College Algebra course, students on average relate more highly to this component than the corresponding course in CTU with an associated effect size of 0.73. There is also a high level of variability among students on this component in the UCF course because the instructor is highly engaged and exhibits all the behaviors previously listed, personalizing the level of communication to the needs and requirements of each student.

Note that in the CTU course, students relate approximately the same to this component with similar variability. At CTU instructors communicate with students at least weekly, as outlined in the university's faculty expectations, because the length of CTU courses is 5.5 weeks (many instructors engage every few days). If students fall behind, time becomes

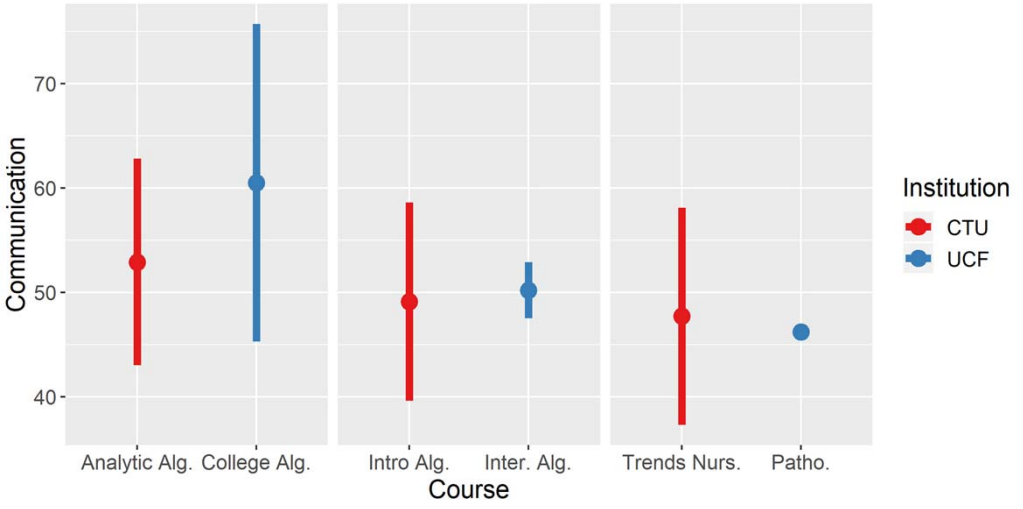
Table 7. Communication

	UCF			CTU				
	n	x	SD	n	x	SD	p	g
Analytic Algebra/ College Algebra	363	60.5	15.2	4,486	52.9	9.9	.00	.73*
Intro to Algebra/ Intermediate Algebra	302	50.2	2.7	6,993	49.1	9.5	.04	.12
Trends in Contemporary Nursing/ Pathophysiology	537	46.2	0.6	303	47.7	10.4	.00	.19

*Noteworthy effect sizes

Source: authors' own study.

Figure 3. Communication: The points represent the course mean and the vertical bar represents the ±1 standard deviation from the mean. CTU is represented by red and UCF by blue



Source: authors' own study.

a debilitating factor in the ability to succeed. Intermediate Algebra and Pathophysiology exhibit very low variability. This suggests that the instructor broadcasts general messages versus personalized communications.

Knowledge Growth

Knowledge Growth (G) represents a group of metrics that define each student's progress during the course. The summary statistics of each course on this component are given in Table 8 and Figure 4.

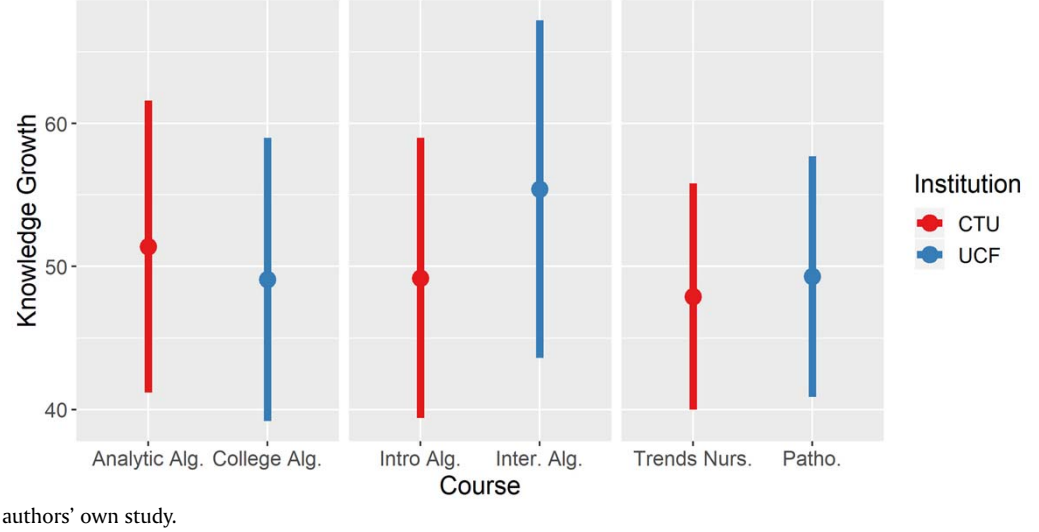
Table 8. Knowledge Growth (G)

	UCF			CTU				
	n	x	SD	n	x	SD	p	g
Analytic Algebra/ College Algebra	363	49.1	9.9	4,486	51.4	10.2	.00	.23
Intro to Algebra/ Intermediate Algebra	302	55.4	11.8	6,993	49 .2	9.8	.00	.63*
Trends in Contemporary Nursing/ Pathophysiology	537	49.3	8.4	303	47.9	7.9	.02	.17

*Noteworthy effect sizes

Source: authors' own study

Figure 4. Knowledge Growth: The points represent the course mean and the vertical bar represents the ±1 standard deviation from the mean. CTU is represented by red and UCF by blue



Source: authors' own study.

The only comparison with a noteworthy effect size is Intermediate Algebra at UCF when contrasted with Introduction to Algebra at CTU. This is not surprising since the UCF course is more remedial. Those students without the necessary knowledge to attempt College Algebra must complete the Intermediate Algebra course. This would imply a relatively reduced level of prior knowledge meaning that they also have an opportunity to grow. Prior knowledge will always be negatively correlated with knowledge growth. That is, students who know most of the course material at the start have less to gain than those who know very little and now have the opportunity to learn predominantly more. The variability is approximately equal across all the comparisons and is large enough to show that students in these courses have a wide range in different levels of progress and/or changes to their mastery level.

Discussion and Implications

Previous work by the authors (Dziuban et al., 2018) and this article show that adaptive learning involves stable dimensions (knowledge acquisition, learning engagement, growth and communication) across varied disciplines and learning contexts. However, results reported here suggest that adaptive learning is complex because variables are involved, some of which are observable and some that cannot be measured. Multiple colleagues have commented that the scores have been derived from dimensions that cannot be directly observed. While true, these methods seem reasonable in order to understand the interactions that define the emergent property of adaptive learning. Often, important elements must be constructed. Further, there is a predictive element in this work that describes how various student prototypes will respond to adaptive learning. The researchers offer explanations such as highly motivated nurses, general education for undergraduates and the characteristics of working adults, but explications are better cast as working hypotheses. Cause and effect allude the researchers in this study.

Several circumstances, however, do appear to impact adaptive learning environments. Although the two universities and their common adaptive platform provider do not comprise a comprehensive sample, their diversity suggests that the interaction of institutional strategic initiatives and the capability of the adaptive platform constitute a reasonable framework for predicting how students will learn, engage, grow, and communicate. For instance, CTU can require faculty members to perform certain functions, whereas UCF has much less control over how instructors conduct their courses. This is true for students as well. Acquiring some entry level baseline for the determine knowledge metric gives the decision engine in Realizeit much better parameters for guiding a student through a course. Making the pretest optional at UCF impacts the instructional design algorithm.

Student cognitive, affective and behavioral characteristics impact how adaptive learning constitutes the educational climate in the classroom. The large populations of older and mostly working adults who enroll at CTU have many demands that compete for their time and attention. Although certainly motivated to learn, seemingly a primary goal for them would be an educational credential that advances them professionally. Therefore, adaptive learning allows them to control their learning space, accommodate their need for workplace or job progression and receive an excellent education. At UCF, College Algebra is a major stumbling block for undergraduate students, especially when used as a general education requirement with no intention to pursue further mathematics study. Not meeting the math placement requirement is an event that seriously alters their educational program. Required enrollment in the noncredit bearing Intermediate Algebra course can lengthen a student's completion time, causing them to change majors or drop out. Sequential adaptive Intermediate and College Algebra courses create the possibility to complete both in one semester and remain on track, thereby reducing student ambivalence about mathematics and education in general.

These results also have implications for both faculty and student development. The level at which students relate to knowledge is relatively equal across courses and universities but demonstrates considerable individual student variability, because engagement levels tend to vary widely across disciplines and universities. Similarly, communication varies across discipline and institution. Gains reported as individual differences are substantial but university levels are generally equivalent except for Introductory Algebra. Taken as a collective, the researchers have found that although the same dimensions define the adaptive learning environment, how students relate to those dimensions is key to understanding their voice.

These diversities strengthen adaptive systems, forcing students and faculty to become more flexible and agile because small inflection points during the learning process can result in dramatic changes in the process. The non-linearity inherent in adaptiveness presents problems for prediction and determination but creates an autocatalytic learning system that generates continuous feedback loops that create momentum for the system.

Limitations inherent in this study constrain the robustness of these results that should be validated across multiple universities and adaptive platforms. Nothing in these analyses assesses the psychometric adequacy of the indices in Table 3. Do they represent an adequate sample from a domain of importance?

Like most studies in higher education, this research raises many questions. Can adaptive learning help reduce the growing ambivalence in the student population about obtaining a post-secondary education? Can it lesson ambiguity among students about understanding the rules of engagement in their courses? Is there some way, through adaptiveness, to further inspire

teachers? Can the relationship among faculty and students be improved? Can interaction and communication be refreshed, creating a more energized learning environment? Ultimately, can adaptive learning expand the productive learning horizon for students?

While these questions represent aspects of complexity, their answers will address more fundamental ones. Does adaptive learning have a bona fide place in higher education and if so, what is the potential value added verses opportunity cost? These larger questions are best answered through research partnerships not only between universities and vendors, but with professional and governmental agencies. Multiple perspectives, although conflicting, can add clarity to an issue and provide better guidance for research that is authentic, contextual and reflective.

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Abstract

Adaptive learning technologies impact higher education by modifying the traditional time constraints placed on the learning cycle, thus permitting students to compress or expand their learning spaces. Previous work by the authors has demonstrated dimensional stability in the adaptive process across universities with considerably different strategic initiatives. However, a prevailing question remains about the correspondence of student position on those components. Transformed component scores for the four stable dimensions (knowledge acquisition, engagement, growth and communication) have been contrasted for comparability in beginning Algebra, College Algebra and Nursing courses at the University of Central Florida and the Colorado Technical University on several metrics generated by the Realizeit adaptive learning platform. The results indicated considerable variability in student affinity for the underlying dimensions depending on a number of considerations such as course length, subject area, and the instructional design process. The authors have concluded that adaptive learning is a complex system in which the interaction of the elements becomes more important than individual measures for understanding the emergent property of this learning environment. Finally, they contend that the potential value added of adaptive learning must be carefully considered with respect to its opportunity cost.

Keywords: online courses; academic achievement; adaptive learning; blended learning; digital learning; college students; educational strategies

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Building Tasks with Instant Messaging Apps

Alice Gasparini[*]

Knowing a foreign language is an asset for people who want to travel, work or move in our globalized and rapid-changing world. There is a constant (Widdowson, 1990, p. 2) need to adapt the language teaching to the changes happening in the world. Thanks to new technologies, language learning may become more effective and attractive, allowing the learner to feel closer to the society and the country in which the language is spoken. In particular, mobile technologies enable a more personalized approach to learning by using target languages to resolve communication challenges. 'In addition, mobile technologies offer affordable learning resources (Kukulska-Hulme, et al., 2017, pp. 217–233).'

On the other hand, it is well-known that technology itself is neither a method nor an approach. It is a tool. According to that, teachers need to rethink their way of teaching to create new models in which pedagogy and technology may be fully integrated. The author of this paper presents the experience of a traditional classroom second language course blended with technology-mediated tasks. That solution has turned out an excellent way to insert new and highly motivating activities (developed in a virtual environment) as well as to guide students among a large number of available resources.

This blended solution applies TBLT (Task-Based Language Teaching) as a method of learning the second language by completion of real word tasks.

What is a task?

Micheal Long defines 'a task' as *a piece of work undertaken for oneself or the others, freely or for some reward. Thus, examples of tasks include painting a fence, dressing a child, filling out a form, [...] making hotel reservation, finding a street destination* (Long, 1985, p. 389).

According to David Nunan, 'a task' is *a piece of classroom work which involves learners in comprehending, manipulating, producing or interacting in the target language while their attention is principally focused on meaning rather than form* (Nunan, 2004, p. 10). Also, Jane Willis describes it as *a goal-oriented activity in which learners use language to achieve a real outcome. In other words, learners use whatever target language resources they have to solve a problem, do a puzzle, play a game or share and compare experiences* (Willis, 1996, p. 53).

The task is an authentic, connected to real life, goal-oriented activity. The idea of using authentic activities related to real world communication represents a big revolution in second language teaching. It is no longer focused on the description of the foreign language but the use of it. According to Hymes communicative competence (1972), the language in action has become crucial, and this importance generates the need to invent and propose authentic and realistic tasks.

In the literature, one can find two main task models. First, proposed by Willis, includes three phases – pre-task, task-cycle, and post-task. More detailed information about it has been provided in the section *Implementing tasks with Whatsapp*. In the second model, defined by Mike Long, the first phase includes the needs' analysis that leads to selection the main task types such as 'making a hotel reservation' or 'booking a holiday house.' Once selected the target tasks, for example 'making a hotel reservation', the teacher creates the pedagogical tasks, smaller steps which will lead the students to their target task. Assessment of learners' progress and program evaluation constitute the last phase of the task.

In the method used in this case study, the two models were mixed. The first phase, the needs analysis and the last phase (the assessment of the learners and the program) come from Long's model, while the task development follows Jane Willis'.

Task and Technology

In our everyday life, we carry out numerous tasks supported by technology tools such as writing emails, chatting with other people, and using Google to search books or new holiday destinations. All of them imply linguistic skills: reading, writing, understanding and selecting information. Computers, smartphones, and tablets allow us to make something real such as creating various materials and texts as well as

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communicating with people on the other side of the globe. That makes them ideal for experimenting with the 'learning by doing' – the Deweyan principle of experiential learning.

Web 2.0 technologies are unique environments in which students can 'do things' by technology-mediated transformation and creation processes rather than just reading about language and culture in textbooks or hearing about them from teachers. Thanks to the new technologies, students can feel involved in active learning and holistic tasks, and therefore they are perfect candidates for their integration in TBLT (Van den Branden et al., 2009).

Developing a task using technology boosts students' motivation and participation. From the very beginning learners are aware of the purpose of the activities they are requested to perform; therefore they can focus on the skills or knowledge needed to accomplish them.

In this paper, the author presents the experience of the second language acquisition classroom setting blended with tech-mediated tasks. The word 'blended' implies variety, and as it is shown later, variety enhances motivation. Tech-mediated activities mixed with more traditional classroom setting may be a solution for those who are skeptical about new technologies or are not accustomed to an entirely virtual environment.

While applying new technologies in a language learning course, teachers need to consider whether the students are open and willing to try them. Effective and satisfactory learning experience depends on a combination of factors such as the students' individual learning style and the influence of so-called cultural learning styles, according to which *cultural upbringing plays a decisive role in determining a student's learning style* (Heredia, 1999, p. 2).

Motivation and variety

Blending different teaching approaches or instruments offers incredible advantages for the students and a teacher. It implies variety, novelty and new challenges for both sides. Introducing new activities or changing learning environment gives students the chance to put themselves to the test in various conditions. The teachers' winning strategy to fight with students' lack of motivation is to create a learning path with some degree of variety. Such elements are listed by Balboni as *pleasant emotions linked to teaching*; they reinforce the idea that learning a language could be *unpredictably stimulating* (Balboni, 2002). Moreover, they provide students an opportunity to switch between the traditional environment and technological one as well as to try out different learning settings.

Technology may also have emotional advantages for the students who might feel shy and fearful about using the language they are studying. According to Gónzalez-Lloret and Ortega, *language learning tasks mediated by new technology can help to minimize students' fear of failure, embarrassment or losing face; they may raise students' motivation to take a risk and be creative while using the language to make the meaning* (Gónzalez-Lloret, Ortega, 2014, p. 4).

How to choose the appropriate tasks and technology

One of the first and most important steps when creating and implementing a language course is the needs analysis (NA). Understanding what the needs of a program are, and whether they are met by the program, is a fundamental principle for the implementation of any program (Patton, 1997).

We can define the needs analysis as *the systematic collection and analysis of the information necessary for defining a defensible curriculum*. The needs analysis becomes crucial to select or create the right tasks for the students. Except for linguistic needs analysis, students' digital literacy is also vital. Thanks to that, one can understand and choose better technology which is most suitable to realize the selected tasks. There are a few models of needs analysis. Witking and Altschuld (1995) propose a three-phase paradigm:

- development of a plan allowing to identify the major needs, issues, and areas as well as to choose what data, sources, methods to be used;
- collecting, analyzing and synthesizing data;
- the prioritization of needs, development of an action plan and evaluation of needs analysis.

Brown (2009) also designs the three-stage model for the NA – preparing NA, conducting NA and using results to decide objectives. Both models are based on mixed-method research and multiple sources. Some useful methods of carrying out the linguistic needs analysis and technology need analysis include interviews, questionnaires, and observation of interactions among the students.

Assessment and tech-mediated task

Tasks may unfold interesting opportunities in the language learning assessment. *They present goal-oriented, contextualized challenges that prompt examinees to deploy cognitive skills and domain-related knowledge in authentic performance rather than merely displaying what they know in selected-response and other discrete forms of tests* (Kane, 2001, p. 322).

As mentioned before, learners who accomplish the task are requested to carry out a performance defined by the Council of Europe as *a relevant performance in a (relatively) authentic and often work- or study-related situation* (Council of Europe, 2001, p. 187).

Performance-based assessment is criteria-related because the teacher needs to evaluate student's ability to accomplish the task, their skills performed in developing it, and the way they use the language in real situations rather than presenting what they know about the language. Establishing effective and objective criteria is one of the biggest challenges.

When teachers decide to base their assessment on the performance of a task, they should also decide whether to evaluate and include in the rubrics the performance itself or the language used by the learners.

As Gónzalez-Lloret points out, criteria should be developed by a *domain expert who knows what a successful performance of the task looks like, [...] based on the target language and the observations conducted through the needs' analysis* (Gónzalez-Lloret, 2014, p. 55).

accomplish the assessment. Teachers can easily use these tools to assess their students' writing skills by observing and grading the conversations without interfering with it. As mentioned in the case study later on, students create the video or audio files that may be used for their skills evaluation. Thanks to that, it is possible to generate useful feedback on their language progress.

Using commonly accessible software like Skype or Google Hangouts one may test students speaking and listening skills. It is worth to emphasize that students should be familiar both with the task and the selected technology before taking the test.

Case study

Mobile Learning

When deciding to use technology during the course, one should consider its availability, students linguistic needs, and their digital literacy. That first aspect should not be a problem in the digital era when people have broad access to devices such as computers, tablets, and smartphones. However, it is essential not to take this availability and familiarity for granted. The too challenging tech-mediated task or too tricky and unfamiliar tool may cause students frustration, and in consequence losing the motivation to learn a new language.

People use smartphones for communication, sending pictures, writing e-mails, searching for information but they rarely consider them as a learning tool or as a tool allowing to achieve ubiquitous learning experience.

Mobile tools may represent a bridge between classroom learning environment and out-of-the-classroom world. As Kukulska-Hulme states *dichotomies between formal and informal learning may also require reconsideration […], language learning now increasingly traverses the classroom and learning takes place in virtual spaces and out in the world* (Kukulska-Hulme, 2017, p. 218).

With mobile devices, teachers have the opportunity to bring the outside world inside the classroom and make their courses more real and authentic. The challenge for them is to find a new pedagogical framework allowing to combine better these two worlds and give their students the support necessary for searching and using information available in the virtual world.

Teachers face the challenge of identifying and creating synchronous real-world learning tasks that are skillfully woven into the everyday life (Kukulska-Hulme, 2017, p. 219).

Instant messaging applications

Instant messaging is a set of communication technologies used for text-based communication between two or more participants over the internet or other networks. The conversation is real-time, and the most advanced applications allow for sending files, links, and video chatting as well. Since 2010 the Instant Messaging platforms are in decline, and today instant messaging takes place mostly on messaging apps. According to Wikipedia the main of them are WhatsApp, Facebook Messenger, WeChat, Line, Telegram, Snapchat, and Viber.[1] They all have similar functions such as real-time chat, sharing files, taking pictures and video chatting.

Geographically these technologies seem to have their regions of domination. Facebook Messenger is widely used in the USA and some European countries, Whatsapp in European countries, Russia and South America (Figure 1) and Wechat in China.

These functions are highly interesting from a second language acquisition perspective. They offer the opportunity to use various texts and files. The multimodality of the instant messaging apps may be an asset if used for implementing a tech-mediated task.

More than 5 billion people use instant messaging apps every day. Whatsapp and Messenger have more than 1 billion users each, Wechat – almost 900 million. They are They are heavily used for communicating as well as sharing photos and video (Figure 2).

The case study described in this paper is based in Moscow, Russian Federation where Whatsapp is the most popular instant messaging app. That is the reason why this application has been chosen for implementing some tasks within the Italian language course offered by the Italian Institute of Culture in Moscow.

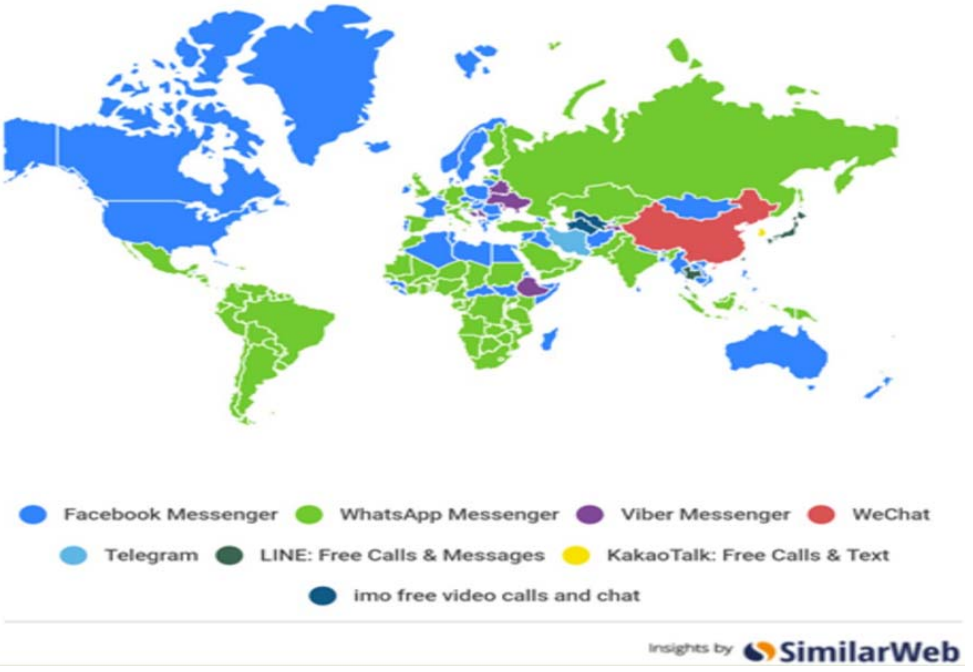
Implementing tasks with Whatsapp

The technology in task-based learning was tested with the group of 12 students attending the B1/B2 course. The students of the Italian Institute of Culture chose Italian as a foreign language mainly for private reasons (nearly 75%). They often travel to Italy, have a house in this country or simply love Italian culture. Nearly 20% of students learn Italian for professional reasons. They are interested in studying or working in Italy. Only 5% of the learners already work for Italian companies or use this language at work.

The first step taken in this case study was making the needs analysis to identify the linguistic needs and choose the best technology tools. It was conducted by using the interview and the questionnaire that covered questions about students' digital literacy and their preferences for using computers, tablets or smartphones. The mobile tool was adopted because it was the preferred choice of the students. Furthermore,

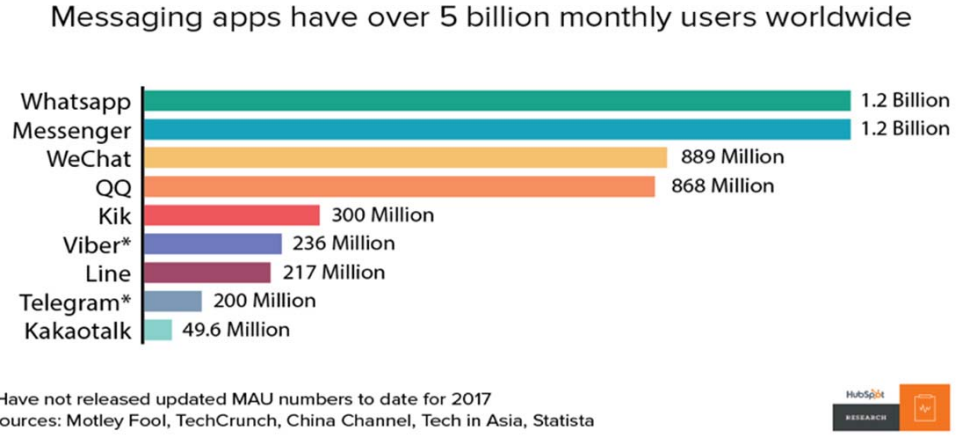
[1] https://en.wikipedia.org/wiki/Instant_messaging#cite_note-43

Figure 1. Instant Messaging Apps in the world



Source: Similarweb, https://twitter.com/stocktwits/status/975774113565429760

Figure 2. Messaging apps users in the world



Source: https://research.hubspot.com/charts/messaging-apps-have-over-4b-monthly-active-users.

the choice of personal smartphone was also supported by the BYOD (bring your own device) approach, *an increasingly widespread orientation that consists in requiring users to be equipped with personal tools of work and learning such as smartphones and tablets* (Fratter, 2016, p. 119). Learners use their mobiles for different purposes, such as personal, leisure and training. That familiarity allows them to adjust their devices also for the learning. Students chose Whatsapp because it is widely used and known.

Whatsapp allows exchanging the text messages, images, video, audio recordings, documents, geographical positions, making VoIP calls and video calls with anyone who has this application and access to the internet.

As mentioned before, the development of the task has been based on Jane Willis' model and it involved three main phases:

- pre-task – the teacher presents instructions and divides class into groups or pairs; learners prepare for the task with the help of the teacher;
- task cycle phase – accomplishing the real task divided into three phases, performing task in pairs with the oral or written report and its presentation;
- post-task – focused on the form such as grammatical structures and lexical aspects not fully internalized by learners.

In the case study, the teacher always adjusted this last phase according to the task objective. As

mentioned before, the tasks were created following the results of the Needs Analysis taking into account the syllabus of the course book.

Each task was performed according to the same scheme. First, the teacher created a class group chat and work group chats on WhatsApp. Thanks to that, small groups of students could communicate with each other independently. For example, one of the tasks that students got was: *Find an apartment for your summer holiday in Italy. Discuss this problem with other students and choose one option*. There were three groups of students. Each group had a chat thread where they could discuss the topic. After the teacher sent the main task, in this case, three links to the apartments offered on Airbnb website in three different destinations, and students should have started to chat about the topic.

The teacher followed the conversation without interfering in it. He/she offered his/her help only when it was necessary or requested by learners. The chat worked as a virtual working group where the teacher observed the progress without interfering.

For every task, the teacher used Google Docs to support and guide the students in the process of reading and selecting the essential information. In the described example, students had to look for some specific information on the website, such as price, house location, facilities, number of guests, a policy of cancellation, and filling the given table. Learners had to choose the best house and then to prepare the report covering their actions.

In the third and last phase of the task cycle, students should have presented that report. They could choose different ways of presentation such as reading their work in the classroom, showing the video or audio file. Since the first part of the task was developed and focused on written skills, the final report served for checking the aural skills.

Assessment and evaluation of students'work

The assessment phase took into consideration both the Whatsapp chat and the final outcome of the task. Scale from 1 to 5 was used in evaluation.

The assessment criteria included:

- accomplishment of the task,
- communicative effectiveness,
- fluency and correctness.

Furthermore, the questionnaires were used to evaluate the overall experience. Students answered five questions concerning different aspects of the experience:

- overall experience,
- the tasks,
- use of technology,
- applied mobile tools and instant messaging app,
- the report.

Students could rate every aspect using the scale from 1 to 5, where 5 meant very useful/very positive and 1 – not useful/not positive at all. Apart from the grade on the scale they could also add comments.

Conclusions

This experience was very interesting both for students and for the teacher. Students accomplished all the tasks. They received feedback about their progress and learning stage. It was simultaneously challenging and helpful providing students and teachers an opportunity to *judge and observe the effectiveness of the pedagogic activities* (Gónzalez-Lloret, 2014, p. 54).

In general, 80% of the students considered this experience to be beneficial and positive. As for the tasks, 90% of students thought that they were very useful and positive learning activities. Opinions about using the instant messaging app were age-related. While 75% of students felt comfortable using Whatsapp for language learning purposes, the remaining 25% of them found using this app as challenging. They suggested using other devices (with a bigger screen) like a tablet or computer as well as other software or platforms (not only the instant messaging app). The last question in the questionnaire concerned the report; 85% of the learners considered it useful and positive. They also appreciated the possibility to present it in different ways.

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Abstract

In this article the author tries to analyze the relationship between 'task' defined in specialized literature as an activity in which the language in question is used with a communicative purpose to achieve an outcome (Diadori, et al., 2008) and its implementation in virtual environments. In the first part of this paper author presents the 'task' and Task-based Language Teaching main features. The article describes the advantages of introducing technology-mediated tasks in a traditional classroom environment. This point of view is supported by the data collected during the case study performed at the Italian Institute of Culture in Moscow, Russian Federation.

The second part focuses on the case study. The technology-mediated tasks supported by Whatsapp – an instant messaging app were used in the Italian as the foreign language course. The app allowed to create an informal learning path, parallel to formal learning. The chat rooms of the Instant messaging app were the space when students should to work. There they received task instructions and had to chat in Italian making decisions and solving the problems. The performance of the task also included preparing and presenting the report.

The data collected from the tasks' assessment and the overall experience suggests an increasing students' motivation and interest to learn languages enhanced with technology.

Keywords: task-based language learning; instant messaging app; mobile learning; motivation

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Virtual Classes as an Innovative Tool for Conference Interpreter Training

Agnieszka Biernacka[*]

Virtual Classes (VCs) make up a pedagogical tool taking advantage of videoconferencing for simulations of interpreting. Up to the present, the Institute of Applied Linguistics, University of Warsaw, has been the only interpreter training center in Poland to offer this type of a blended learning model. VCs were originally designed to meet the requirements of the training within the EMCI (European Masters in Conference Interpreting) program implemented by the Institute as the Polish member of the EMCI Consortium. The aim of this paper is to present the findings of a longitudinal study based on observations of the trainers and trainees involved in preparing, carrying out, and reflecting on VCs.

Video-Mediated Interpreting and the Classroom

Virtual Classes (VCs) make use of the idea deployed in videoconference interpreting (VCI) and remote interpreting (RI) (Moser-Mercer, 2003, 2005), where interpreters and their clients, situated in different places, communicate with one another via special devices and infrastructure. VCI and RI are successfully deployed in healthcare, legal, and other institutional settings (Braun, 2013; Napier, 2012; Locatis et al., 2010, 2011), even though both modes may impose certain constraints on communication (Mouzourakis, 2006; Braun, 2015b).

The first VCI dates back to 1976 when the debate took place at the conference in Nairobi, Kenya, while the interpreters provided their services from the UNESCO headquarters in Paris (Braun, 2015a). Further tests (Tryuk, 2007) proved that RI was feasible, but problematic, mainly due to low sound quality. The scholarly research has confirmed that despite of facilitating the organization of events (Mouzourakis, 2006; Tryuk, 2007), RI indeed imposes limitations concerning sound quality, and revealed other hindrances. Table 1 shows possible problems, which can appear during RI and VCI:

In spite of these handicaps, distance education training for interpreters has been incorporated in curricula, although at the moment of the birth of this idea, it was labeled as an *insurmountable oxymoron* (Carr and Steyn, 2000, p. 83). Nonetheless, nowadays, it seems that in the 21st century *the triumph of technology* (Tryuk, 2007) does not leave the interpreters behind; instead, it is pointed out that *video-mediated conference interpreting is increasingly commonplace and even routine*

Table 1. Possible problems related to RI and VCI:

Problem	Authors
poor visibility	Mouzourakis (2006)
a feeling of alienation and decreased motivation of the parties to the remote communicative act	Mouzourakis (1996); Braun (2007)
the parties being 'left out'	Moser-Mercer (2005); Mouzourakis (2006); Roziner and Shlesinger (2010)
remoteness (*loss of co-presence*)	Setton and Dawrant (2016, p. 36)
decreased concentration, lack of handouts	Seleskovitch and Lederer (2002)
background noise, scarce eye contact, social interaction problems in consecutive interpreting via videoconferencing, a need to adapt to new means of communication	Braun (2007)

Source: author's compilation.

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(Setton and Dawrant, 2016, p. 34), and *blended learning is already a reality* (Rodríguez Melchor, 2018, p. 91).

The aim of this paper is to present the results of a 5-year pioneer – at the national level – project carried out by the Institute of Applied Linguistics, University of Warsaw, consisting in offering a blended learning module in conference interpreter training, and in particular, to focus on the trainers' and trainees' perspective as regards preparing, carrying out, and reflecting on VCs.

Method

The ethnographic study, the results of which are discussed in this paper, has been conducted as an *emergent design* (Creswell, 2014, p. 186), which allows an observation-based analysis of pedagogical opportunities, tasks, and attitudes of the trainers and trainees of the Institute of Applied Linguistics involved in preparation, realization, and follow-up activities related to VCs. This empirically grounded analysis preconditions a *bottom-up approach* (Silverman, 2000, p. 139) where naturally occurring behavior observed in a *natural setting* (Creswell, 2014, p. 14) is a point of departure for *exploring new, uncharted areas* (Dörnyei, 2007, p. 39) of VCs as an innovative pedagogical tool for the interpreter training in Poland.

The data was collected in the period between 2013 and 2018, that is, during the whole time-span of the VCs offered on a regular basis (at least three times a semester, which translates into 6 hours of virtual training) at the Institute of Applied Linguistics. At that time, 31 VCs – which amounted to 62 hours – were organized (exceptionally, in the initial 2013/2014, two VCs took place, while in the academic year 2014/2015 the record of 11 VCs was set up). A total number of *purposefully selected* (Creswell, 2014, p. 189) trainees who actively participated in VCs (interpreting and receiving feedback), and trainers, involved in either preparing, assisting in, or carrying out reflections following VCs, or all of these activities, amounted to 120 and 16, respectively. All of them[1] constitute a *small sample size* (Dörnyei, 2007, p. 38) for the qualitative analysis, probably conducive to further research in the field. As regards the trainees, the criteria for selecting them included: training level and language combination, while the trainers were indicated according to the language combination and their availability for a particular class.

Furthermore, as regards the discussed study, the author has been both a researcher (*key instrument*, Creswell, 2014, p. 185) and a trainer involved in VCs. It seems that in spite of disadvantages of assuming this dual role such as *insider meaning* (Dörnyei, 2007, p. 38) affecting a degree of criticism towards VCs or *naturalistic generalizations* (Stake, 1995, p. 86), which influence the way of reporting the findings, the advantages include, first, that it has not been necessary to ask for permissions to gain access to the site and to carry out the observation, and secondly, that the author has been perceived as a regular element of the setting thus, at least in a certain sense, possible artificial behavior on the part of participants resulting from the presence of third parties has been eliminated.

The material for the study consists of the researcher's field notes (including the opinions of the trainers and trainees) and written documents in the form of draft scripts prepared for all VCs. As to other evidence, pursuant to the constraints imposed by the provisions of Intellectual Property Rights, speeches prepared and provided for the purposes of VCs cannot be recorded (or even used for the purposes of other classes). The right to take photos is also limited and possible only upon an express consent granted by all the attendants.

The qualitative design of the study has been developed in order to provide a *complex picture* or a *holistic account* (Creswell, 2014, p. 186) of the phenomenon of VCs as an innovative tool for conference interpreter training. To this end, after the general information of VCs as a component of program design is provided, the following issues as observed during the study have been presented:

- the Institute's partner institutions and languages covered by VCs,
- technical requirements and constraints,
- draft scripts as main documents guiding the attendants,
- content of the VCs,
- the trainers' and trainees' perspectives (*participants' engagement in activities*, Creswell, 2014, p. 19).

VCs as a component of program design

Originally, VCs were designed to meet the requirements of the training within the EMCI program, which is classified in Poland as postgraduate studies; nonetheless, with time, VCs appeared to be a useful tool for interpreter training also at MA (second degree) level.

As regards both EMCI and MA programs, the trainees acquire interpreting skills in both directions: from B into A, from A into B, from C into A, and from A into C, the latter being related to the requirements of the Polish national market where the interpreters with a certified interpreting skill within A, B and C languages are expected to satisfy the needs of their clients. In general, the training objectives of the MA program assume preparing highly skilled specialists in interpreting and cross-cultural communication (A-B-C combination), while as regards the EMCI program – training professional conference interpreters in the A-C-C or A-B-C combinations, with a particular

[1] With the exception of the trainers and trainees of partner institutions who are not included in the sample as not being objects of the observation.

consideration of the demand for conference interpreters from the EU institutions (accreditation tests).

In order to satisfy the above objectives, set for both the EMCI and MA level, the trainees are offered 360 hours of face-to-face training[2], composed of both consecutive and simultaneous interpreting. To this number at least 12 hours dedicated to VCs are added.

Results of the study

The longitudinal (Dörnyei, 2007, p. 40) observation-based study has shown a variable nature of all the components of VCs, that is: partner institutions and the languages covered by VCs, technical requirements, draft script, content, as well as the trainers' and trainees' awareness and expectations.

Partner institutions and languages covered

Among the institutions with whom the Institute of Applied Linguistics has been cooperating as regards VC there are pedagogical assistance units (e-learning units) of the EU institutions: DG LINC of the European Parliament and DG INTERPRETATION/SCIC of the European Commission, as well as partner universities, which are, along with the Institute, members of the EMCI Consortium. So far, VCs have been available at Universidad de La Laguna, Universidad Pontificia Comillas de Madrid (Spain), Univerza v Ljubljani (Slovenia), ISIT and ESIT Université Sorbonne Nouvelle Paris 3, Paris (France), Faculté de Traduction et d'Interprétation, Geneva (Switzerland), Univerzita Karlova, Prague (Czech Republic), and SCIT – Herzen University, St. Petersburg (Russia). VCs have also been organized with external partner universities, mainly with London Metropolitan University (UK), preconditioned by the fact of offering Polish as one of the languages of conference interpreter training.

The languages covered by VCs are: Polish (being overwhelmingly A language for the trainees), English, French, German, Spanish, and Russian, the latter being offered only within the MA program, while all the former ones are provided for both the MA and EMCI trainees.

The frequency of VCs depends on the need to practice interpreting within a particular language combination, and on availability of native speakers (it is recommended that the speeches be delivered in the speaker's A language) of the languages scheduled for a VC both in Warsaw and at the partner institution. The variability of the languages, consisting in adding new language pairs to the already established schemes, commonly depends on the interest of partner institutions in holding a particular VC as a step towards establishing new relations; such is the case of starting to co-organize VCs with Herzen University, St. Petersburg, as a new member of the EMCI Consortium.

Technical aspects

First VCs offered at the Institute were provided via Skype connection. Since 2014, it has been a local videoconference infrastructure – Brand Polycom HDX7000 HD, which ensures a desirable *reliability of connection* (Setton and Dawrant, 2016, p. 37) and has been successfully used.

Despite the fact that, as mentioned above, the Institute offers both consecutive and simultaneous interpreter training within face-to-face hours, this scheme cannot be easily transferred to VCs. This is mainly due to technical constraints, including, but not limited to, low sound quality in booths. Therefore, at present VCs in consecutive interpreting are provided, although in the past there were attempts to offer VCs in simultaneous interpreting.

Another technical issue is that VCs are organized by the Institute overwhelmingly bilaterally (BVCs), i.e. between two partner institutions, and (sporadically) multilaterally (MVCs), with three partner institutions. As regards the latter, their number is limited not only because of the partner institutions' low demand of Polish as the trainees' B or C language, but also because of huge technical (and organizational) effort they imply.

Draft scripts as written evidence

At the pre-VC stage, which takes a few weeks, the partner institutions negotiate the date and hour, as well as the length of a particular VC (usually 120 minutes), a number (3) and a level of speeches (intermediate, advanced or test level), as well as the topic, which is the same for all speeches during a particular VC. It has been noticed that general topics are recommended; historically, they included e.g., *Europe's aging population*, *Euroscepticism*, *Air pollution in cities*, and *Renewable energies*. All the above-mentioned data, along with the names of trainers and trainees attending the VC, is inserted in the draft script. Typically, the draft script is made available via email or Google in order to give an easy access to the continuously updated details. Moreover, special closed Facebook groups are created to serve the trainees to exchange glossaries and other information they deem helpful.

A note to speakers and trainees concerning the features of the speeches is an important element of a draft script. Apart from the information stated above, this includes such data as:

- a recommended length of each speech (5–6 minutes);
- an indication that the interpreters will be interpreting consecutively with notes;
- a need to deliver a well-structured speech;
- a requirement to present a given problem enriched with some facts being a personal experience of the speaker, a reasonable amount of numbers or statistics, as well as idiomatic expressions.

[2] Overall information concerning the curriculum is available at www.ils.uw.edu.pl.

Draft scripts differ, depending on a partner institution and language combinations covered during a particular VC. For instance, as regards VCs offered within a pedagogical assistance provided by e-learning units of the EU institutions, these are not trainers but the accredited EU interpreters. They provide both the speeches (usually 3 during a particular VC, each touching upon a different topic announced to the trainees in advance) and feedback. Furthermore, some VCs are organized as mock conferences where these are only the trainees representing the Institute and the partner institution who actively participate as both speakers and interpreters, while the trainers assume the roles of observers during, and assessors after such a VC. In 2016/2017 a new model as regards language pairs was also introduced, which had been preconditioned by the fact that Polish, as stated above, was not commonly offered by partner institutions. The new model assumes that speeches in Polish are provided by the Institute's trainers and interpreted by the Institute's trainees into their B language, and only these renditions are then interpreted by the partner institution's trainees into their A language. This idea has appeared to be an effective solution; first, it is possible to co-organize VCs with any partner institution, no matter whether they offer training with Polish as B or C language. Secondly, it seems to be a value added to VCs due to an increased motivation shown by the trainees who become aware of the need to interpret not only in order to be assessed, but also to produce a rendition from which a relay will be taken by their colleagues at the partner institution.

Content of a VC

As to the content, it has been observed that VCs and regular face-to-face classes are similar. During a VC usually three speeches are delivered. Each speech is interpreted twice, by two trainees who cannot hear their renditions; thus, when the first trainee provides interpreting, the other is obligatorily outside the classroom. The trainees' performances are assessed immediately after the rendition; feedback is given by the trainers from the partner institution, which means that the trainees' deliveries are not assessed by their regular trainers. The assessment is composed of the same elements as the one provided during face-to-face training. First, a pure customer (i.e. the client, who does not speak the source language) comments on comprehensibility and grammatical correctness of the target text without referring to the source text unknown to that customer. Then, the trainers assess such aspects as the message (transfer of the main idea of the original speech), accuracy (reproduction of all the details of the original speech), target language (possible errors), style, and delivery (e.g. voice, pace, and possible vocalic fillers).

Such a content of a VC allows the trainees to practice the interpreter's hard and soft skills. The former includes: A, B, and C (listening and speaking) language skills as a prerequisite, active listening for interpreting purposes, concentration, empathy, and note-taking for consecutive interpreting purposes. The latter cover: public speaking, stress management, and self-assessment. In other words, the range of skills is the same during VCs and face-to-face training. What distinguishes the two modes is a distance between various attendants of the class, as well as a changing environment, which means a departure from a well-known context (trainers, peers) of in-house classes to a new setting of a VC.

Trainers' perspective

The observation-based study has shown that trainers involved in VCs assume technical, organizational, and pedagogical tasks. First, in the preparation stage, as regards technical aspects, they are obliged to have a connection test and sound tests with a partner institution. As organizers, trainers work on a draft script, i.e. they indicate trainees' levels, assign trainees to particular interpreting tasks, and ensure a corresponding timetable of the VC. As teachers, they need to explain to the trainees what a VC is, how important a preparation stage is, as well as why and what for a VC is organized (not to test but to assist the trainees in improving their interpreting skills). All attendants are also given detailed information regarding their roles and tasks in a VC. In particular, as no previously recorded speeches are used, special tips are provided to speakers.

According to DG SCIC general guidelines, the speakers are recommended to:

- speak naturally at a reasonable pace;
- speak their mother tongue;
- speak instead of reading;
- speak into the microphone;
- put figures, names and acronyms clearly;
- stick to the time limit[3];
- stick to the level of speeches determined for a particular VC.

Moreover, trainers and trainees are advised to be prepared (as regards content and logistics) and punctual. Secondly, during a VC, trainers:

- instruct the speakers and trainees of a position of a camera, which is immovable, and no zooming is possible on a particular speaker/ trainer/ trainee;
- watch out the way the microphones operate;
- keep up to the timetable;
- greet the partner institution's trainers and trainees;
- introduce the attendants to the partner institution's representatives;
- make all those present stick to the order agreed upon and indicated in the draft script.

[3] scic.ec.europa.eu/scic-tulkit/tips_for_speakers/tips2009_EN.pdf

The trainers also give speeches, provide feedback, as well as they support and assist the trainees. As regards feedback, the observation confirms that it is *less immediate than in the case of face-to-face interpreted communication* (Horváth, 2012, p. 52), and that it is of the *evanescent quality* (Rodríguez Melchor, 2018, p. 96). This is for these reasons the discussion concerning the just completed VC is necessary. Therefore, after the connection stops, the trainers discuss the outcomes with the trainees, provide a general and individual feedback to make the trainees aware of their possible deficiencies, but also to make them feel involved and motivated, as well as answer the trainees' questions.

Irrespective of the load of work, trainers point out considerable advantages of VCs:

- observing the trainees interpreting outside regular classes;
- listening to feedback from the interpreters accredited with the EU institutions and from interpreter trainers at partner universities;
- networking and feeling a part of a large interpreting community;
- comparing the trainees' skills with those of their colleagues at partner universities;
- comparing the trainees' skills with those of their colleagues representing other language sections at the Institute.

VCs as viewed by the trainees

In general, the trainees appreciate that the VCs start at an early stage of the course (week 7 of an intensive course at the EMCI level, and week 12 at the MA level) but report that for them a VC is related to both psychological and professional effort. As regards psychological effort, the trainees indicate stress management resulting from working *within certain parameters* (Carr and Steyn, 2000, p. 86). Although they are instructed that a VC is an extra opportunity to practice interpreting and not to test their interpreting skills, still they explain that they feel exposed to certain inconveniences. Among them they mention: a need to get accustomed to interacting with different people and being ready to face new situations, an obligation to be present in the classroom during the whole VC as they are held in real time of 120 minutes), and self-assessment (critical thinking of performances contributing to the trainees' ability to – gradually and with each new task – improve their interpreting skills). As regards professional effort, according to the trainees it is connected with sensitizing them to the importance of a preparation stage (trainees as team members and as individuals, working on glossaries, and extending vocabulary resources), as well as of time management during a VC.

The observation confirms that a VC may be considered as a *forum for live discussion*, which *motivates the learners, and serves to bond the class* (Carr and Steyn, 2000, p. 86). The trainees perceive VCs in terms of special learning opportunities. First, each VC is an extra occasion to practice interpreting through a direct contact with the professional world. Secondly, the trainees get feedback from the interpreters accredited with the EU institutions and from the interpreter trainers at partner universities can practice stress management skills. Thirdly, they students can compare their own skills with those of their colleagues at partner universities, as well as compare their own skills with those of their colleagues representing other language sections at the Institute of Applied Linguistics. Finally, they network and meet new colleagues who are candidates for the profession.

Conclusions

The longitudinal observation-based study has shown that VCs make up an effective component of a blended learning model; they cannot replace face-to-face training but provide additional, both professional and pedagogical, opportunities for trainers and trainees. Although VCs are characterized by the same features as regular classes, such novelties as: sharing a virtual classroom with up to the moment unknown trainers and/or trainees, facing perhaps different evaluation criteria, and a necessity to cope with videoconference infrastructure make them a tool enhancing the trainees' preparation for the profession. Furthermore, VCs are associated with extra organizational, technical, and pedagogical efforts on the part of the trainers. Nonetheless, it has been reported by the trainers and the trainees that broadly understood technical progress implies that VCs should be permanently incorporated in the curriculum. In recognition of all the presented characteristics of VCs as deployed in the conference interpreter training process, in view of their *sporadic nature* (Rodríguez Melchor, 2018, p. 96), an overwhelming need for development of this component should be underlined, accompanied by further research in the field.

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Abstract

Virtual Classes (VCs) make up a pedagogical tool taking advantage of the idea of remote interpreting and videoconferencing for simulations of interpreting. At present, the Institute of Applied Linguistics, University of Warsaw, is the only interpreter training center in Poland to offer such a blended learning model. The aim of this paper is to present the findings of a longitudinal study based on observations of various stages of VCs in which both the trainers and trainees have been involved. The material for the study consists of the author's field notes from observations, including the trainers' and trainees' opinions, as well as written documents in the form of draft scripts prepared for each VC. The results of the study show that VCs make up an effective component of a blended learning model. Although they cannot replace face-to-face training, they provide both professional and pedagogical opportunities for the trainees. Furthermore, VCs are associated with organizational, technical, and pedagogical effort on the part of the trainers. In general, an overwhelming need for development of this component as contributing to innovative interpreter training should be underlined, as well as for further research in the field.

Keywords: virtual classes; innovative interpreter training; videoconferencing; remote interpreting

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Professional Development for Faculty in Virtual/Online Environments: A Case Study

Traci Van Prooyen[*]

Because the number of online courses, as well as the scope of online education, continues to grow, the educators' quality professional development allowing to teach in these formats is paramount (Desimone, 2011; Dysart & Weckerle, 2015). As we seek how to engage and deepen student learning in online, blended, and distance education and training environments, our professional development should mimic and model best practices of developing and learning in these unique environments (Anderson, Krathwohl, & Bloom, 2001). Flexibility and strengths of virtual/online environments provide not only opportunities for students to learn but also open prospects for professional development of the faculty. The possibility to take more traditional face-to-face professional development expands now to the online environment and all the advantages that environment affords. The author of this paper presents case studies from a small two-year college in the Midwest of the United States. They provide explanations and show the results of three different types of faculty online professional development. Moreover, this paper also includes a summary of collected data and additional reflections concerning the online professional development for faculty.

Setting

The Heartland Community College (HCC) is a relatively new (i.e., 26 years old), public, non-profit, two-year community college located in central Illinois. The district that the HCC serves has a population of approximately 230,000. The HCC offers 26 different associate degrees (i.e., 2-year degrees that transfer to four-year institutions) and 44 certificate programs that serve approximately 5,200 students. It has a student to faculty ratio of 21:1. In total 277 faculty members are employed at HCC, 192 full-time and 85 part-time. Traditional face-to-face settings used to be the primary delivery method for professional development. Those offerings focus on an introduction to the college activity, basic information regarding teaching and learning, as well as on particular book or topic related to teaching and learning. However, various formats (e.g., face-to-face, hybrid, online) allowing to provide professional development correspond better with faculty different wants and needs. Several factors have recently impacted the approach to the faculty online professional development. Those are the following:

1. The number of online courses, particularly during summer semesters, continues to grow (see Table 1 for specific details). This growth shows the need for proper faculty professional development related to designing quality hybrid and online courses.
2. Part-time faculty has various external commitments that often make it difficult to attend and participate in more traditional face-to-face professional development opportunities. They have requested more flexible, convenient, as well as easy to access at any time and any location professional development.
3. The faculty members have also requested that the facilitators are people who create and organize the variety of professional development opportunities.
4. Hybrid and online professional development methods often provide more options for support and allow applying better faculty's experiences into their teaching and learning environments than traditional, face-to-face workshops. Moreover, they also create for faculty participants more opportunities in active learning.
5. Along with full- and part-time faculty interests, instructional administrators (e.g., Deans, Instructional Chairs, and Vice President) have also been asking for additional, high quality, hybrid or online (with the limited face-to-face part) professional development allowing to support faculty participation and accommodate better the institutional culture. The institution's strategic plans includes the need for continuous improvement in teaching and learning through professional development and faculty members are well-compensated (hourly rate, 0.5 Earned Credit Hour, or 3 Earned Credit Hours) for

[*] Heartland Community College

Table 1. Percentage of Courses Offered Online by Semester (Heartland Community College)

	FY 13	FY 14	FY 15	FY 16	FY 17
Summer	22.4%	24.3%	25.8%	27.3%	30.5%
Fall	10.1%	10.1%	10.7%	9.9%	10.8%
Spring	11.0%	10.6%	10.4%	10.5%	10.8%

Source: author's own study. Summarized according to collected data from Heartland Community College.

successful completion of a 'deliverable,' in which they can directly apply what they have learned through the participation in the professional development course. Although professional development is a part of the tenure and promotion process, rather than seeing professional development as a 'hoop,' these types of professional development are of high quality and now model active learning and the 'ditch the sit and get' mindset. The commitment to adequate compensation for these types of professional development, despite the continued state budgetary woes in Illinois, is noteworthy.

So, the push for a wider variety of professional development delivery formats has been from both ends of the spectrum – faculty and administration. Realizing that professional development and learning is a process, the Heartland Community College has focused not on a single workshop or event but has created a variety of types of hybrid and online professional development opportunities.

Professional Development offered by Heartland Community College

The new hybrid and online opportunities for the faculty's professional development at Heartland Community College include three primary frameworks and theories. First, they focus on the adult learners and andragogy (Knowles, 1980), secondly on Universal Design for Learning framework (Rose & Meyer, 2002) and thirdly – the Bloom's Revised Taxonomy (Anderson, Krathwohl, & Bloom, 2001). Some topics are delivered in a variety of formats (e.g., such as the topic of Universal Design for Learning) while other issues focus on a specific type of delivery to better meet specific objectives and learning needs. Figure 1 provides examples of different topics and forms of professional development offered in a variety of formats.

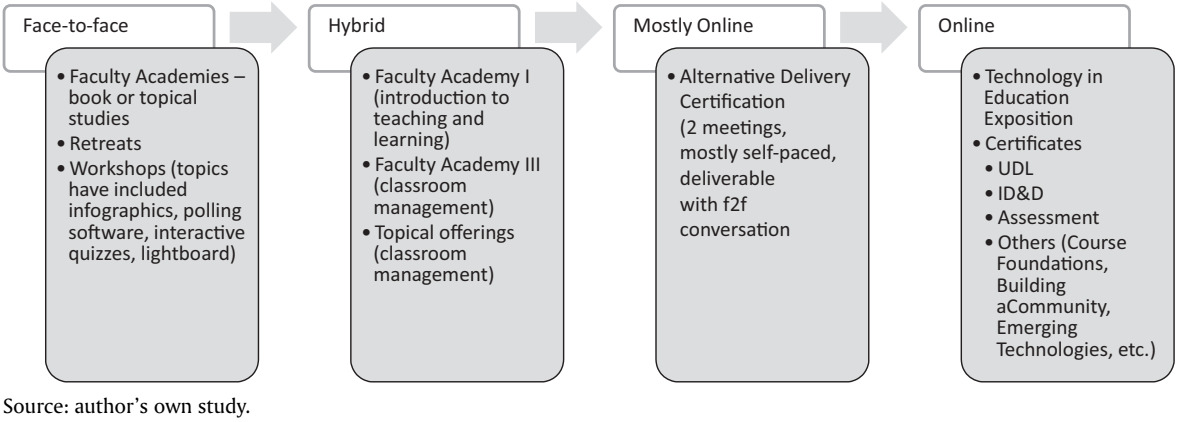
Hybrid Professional Development

Like courses for students delivered in a hybrid environment, professional development for faculty in a hybrid design combines face-to-face and online learning opportunities. Its online part may limit collaborative interaction. So, to counteract this limitation, the face-to-face part includes true collaborative elements, for instance, role-playing, group work, discussions. On the other hand, online parts contain specific online resources that are various types of texts, images, and/or videos. First and foremost, they allow the faculty participants to gather knowledge and then reflect by answering the surveys, taking part in a discussion on a discussion board, writing the journal and/or blog entries. This particular delivery format for professional development is still in its infancy and data collection at this time needs further improvement.

Online Professional Development

Chris Dede (2006) edited the book *Online Professional Development for Teachers: Emerging Models and Methods* which compiles a variety of approaches to the offering of professional development for teachers (from kindergarten to all twelve grades). Garnered from this text is a variety of aspects to include in faculty online professional development. The approach that developers of online professional development at Heartland Community College have taken is to model best practices in online and hybrid course design and address combined factors in online course design

Figure 1. Professional development formats and example topics from Heartland Community College



Source: author's own study.

borrowed from Quality Matters rubric (2014), Chico State and the Blackboard Exemplary course rubric. The instructional designers from HCC also purposefully incorporated into the design of these online professional development courses the theoretical teaching approaches such as andragogy (Knowles, 1980) and the Universal Design for Learning framework (Rose & Meyer, 2002). Thanks to that, participants receive a variety of support and choices regarding the time frames, how to engage the learners, as well as how to represent, express, act on/submit what they have learned. Bloom's Revised Taxonomy which was also applied in the course allows for targeted reflection (through individual submissions and asynchronous collaborative online tools) as an addition to the opportunities for creating authentic 'deliverables' that one may use in classroom practices. Such an approach is by nature more individualized. It allows not only to meet the adult learner needs, affords the faculty participants to gather knowledge on topics related to teaching and learning but also to apply in real-life situations what has been learned (Knowles, 1980).

Since most faculty in higher education have little training in teaching and learning methods, these professional development opportunities support them in enhancing knowledge of various teaching and learning practices. Therefore, the choice of an online environment for professional development is purposeful. By participating in online courses, faculty can become more familiar with, as well as more natural and fluent (at least some of them) in this less traditional teaching and learning environment. The college's learning management system affords itself to offer faculty professional development opportunities as well. This learning management system has primarily served as a student learning platform. For delivering online instruction for students and online professional development for faculty, the learning management system is currently self-hosted on the servers that are on the premises of the college. The system requires user identification (i.e., specific and individual user names and passwords) to ensure digital privacy and data protection for all users. Because this is the same learning management system which faculty members use to teach, getting familiar with it as a student allows for a bit of a role reversal. In addition, it provides a variety of support that is in line with the Universal Design for Learning frameworks (e.g., representation) through the various use of images (e.g., photos, infographics, memes), videos, podcasts, and text-based resources. That helps participants to become more comfortable with technology and shows them how different types of technology may be useful in their own classroom environments. All online professional development opportunities contain elements such as:

1. Modeling high quality, effective online teaching practices recommended by the Quality Matters Rubric (2014), the Blackboard Exemplary Course Program Rubric and others (ION, OCEP Rubric, Chico State). This approach includes: overview/orientation – communicate expectations and key 'nuts and bolts' aspects of the course; organizational design with an easy and clear organization of navigation – materials are 'chunked' into meaningful segments preventing the cognitive overload (Sweller, 1994). Also, a variety of assessments, materials, and resources, supporting the engagement of participants in active learning, the use of appropriate interactions to build community, timely and clear communication and feedback, and learner support are elements of a pathway that supports the various ways in which learning can take place;
2. Presentation of materials through a variety of modalities demonstrates the application of the Universal Design for Learning framework (Meyer & Rose, 2002). It will enable the participants to choose how they engage, represent, express and act on what they have learned to meet the certification requirements. Participants always have access to course materials, even after completion of the certification process;
3. A semester time frame – some certificates have looser accountability related to due dates; others have suggested module times (e.g., 1–5 weeks in length). In terms of professional development, the goal of each online certificate is to include explicitly flexible time frames for faculty to reflect, collaborate, and to better implement and address change through a practical application of a "deliverable" (Woodbury and Gess-Newsome, 2002);
4. Creating space for personal reflection to aid in critical thinking as well as to identify areas of strength and opportunities for growth as related to teaching and learning;
5. Providing asynchronous collaborative spaces allowing participants to share, curate, and gain others perspective as well as to give other participants the feedback related to topics of teaching and learning;
6. A 'deliverable' – as part of compensation and accountability for online professional development, participants are required to create an artifact to implement in their classes. Depending upon the online certification process, the 'deliverable' may either be a fully developed part of their hybrid/online course in the learning management system or, in case of the online certificates, the participants have a choice as to what they create and show;
7. The facilitator/instructor's personal assistance and regular feedback for each participant.

Again, based on both faculty and administrative support, implemented online professional development opportunities are proving to be successful. Described in detail in the following sections of the paper, three types of fully online professional development include a showcase of technology used to support student learning as well as several online certificates focusing on key aspects of instruction.

Technology in Education Exposition

The Technology in Education Exposition was a fully online, asynchronous professional development opportunity featured by cadre faculty experts. Each of them created screencasts providing insights into a larger campus community using different types of technology in students' support. Instead of having face-to-face workshops aimed at presenting different types of technology, a change entailed the application of the learning-by-doing approach, i.e., the learning management system (LMS) was the environment for getting familiar with these. This type of delivery format did not limit attendance based on the room size, but all campus employees were able to participate in that professional development course which remained active for three weeks.

A keynote presenter, as well as 26 other staff and faculty members, created screencasts that show, explain, and present different types of tools used to support students in a variety of ways through the to use different technologies. Presentations covered different apps corresponding to four categories:

1. supporting the understanding (Grammarly, NoodleTools, text blasting apps, and Snapchat/Instagram);
2. creating/sharing/delivering the content (Camtasia and Google Drive, infographics, Kahoot, Livescribe Echo Smart pens, PowToon, Screencast-O-Matic, Voicethread, Weebly);
3. assessing/evaluating the content (rubrics, clickers, Crossword Generator, EdPuzzle, Flipsnack, Phrase Express, Plickers, Poll Everywhere);
4. collaboration tools (Hypothes.is, Twitter, GoToMeeting, Wikis).

Each session included:

1. image and information about the presenter(s);
2. 15-minute (or less) screencast/video;
3. discussion board allowing to answer questions and to facilitate interactions among campus-wide participants;
4. reflection and evaluation questions – each participant had to answer these questions individually while logging to the session. Questions were generated separately for each session; their purpose was to stimulate reflection on how to implement the specific technology tool in one's individual setting and as well as to solicit feedback from participants;
5. additional resources – they included, among the others, the resources needed for evaluating technology tools as well as the information on how and why an instructor would integrate technology into teaching.

Even after the three-week event was complete, the videos and contact information still remain accessible and act as a 'repository' of technology tutorials.

Only 13% of campus-wide employees accessed the Technology in Education Exposition, but those who participated in it, provided the following feedback:

- Comments regarding the online format such as 'incredible,' 'exciting,' 'so inspiring,' 'love the setting and the presentation styles,' 'I'm blown away by this valuable resource,' and 'This connected me to other resources on campus;'
- Comments regarding the presentations such as 'was very informative,' 'I'm learning so much and see some great tools,' 'I had no idea people used technology like this on campus;'
- Comments regarding application of the technology to their own practices such as 'really got me thinking about how to improve student learning with technology' and 'I am a better teacher because of this expo.'

In general, participants valued the online format, the opportunity to see how their peers apply different types of technology tools in innovative ways to support students and the authenticity of the virtual presenters' comments regarding the pros and cons of the technology tools. Based on data collected from the learning management system, five of the individual sessions were expanded outside the online environment to more traditional, face-to-face workshops. Each of these five sessions was replicated twice (due to high enrollments), and participants had the possibility to work in a computer lab to try out the technology tools with the help of the presenter. As a result of this great interest, there are plans to develop the exposition every few years.

Alternative Delivery Certification (ADC)

To teach a hybrid or online course, faculty members are required to complete a twelve-week Alternative Delivery Certification (ADC), a 'mostly' online course. The ADC combines two synchronous meetings interdependent with asynchronous opportunities (delivered online) the content of which focuses on best practices in online and hybrid instruction. The two, synchronous and face-to-face meetings include the following:

- an orientation meeting where participants meet each other and get a full explanation as for the course expectations;
- a subsequent meeting taking place half-way through the course; this meeting is held both face-to-face and through the virtual meeting platform. During that secondary meeting, previous graduates of the ADC show their hybrid or online course development using a 'show-and-tell' method, which is the specific 'deliverable' required for this certification process (hence modeling a requirement of this certification process).

The content of Alternative Delivery Certification process focuses on key topics of online teaching and learning such as introduction to the ADDIE model of instructional design, the Universal Design for Learning framework, 'presence' in an online environment, measurement tools used to evaluate online courses (e.g., Quality Matters), course and learning objectives, as well as assessment, activities and technology tools.

Designed in modules, the required assignments as part of this certification process allow participants to adopt the role of a learner/student in an online course. After learning about best practices in hybrid and online course design, participants gradually shift roles from the students back to the instructors. They need to complete a Course Map which outlines and ties together course learning objectives with a variety of activities, assessments, and technology tools. There is then an informal meeting with each individual participant before developing half of their course (modeling what they have previously learned in the course) in the learning management system. Then a meeting (i.e., "show-and-tell") is set up with the participant, their Instructional Chair and Dean, as well as the Director of Online Learning and Instructional Technologies. During this 'show-and-tell' process, each ADC participant walks attendees through his/her course to gain further perspective and feedback prior to students' enrollment to the course.

For completing this certification, a significant amount of time is required. The estimate is that 96 hours are necessary to complete the course successfully, and faculty members who successfully complete receive monetary compensation. Because of its depth and focus on teaching and learning, successful completion of the Alternative Delivery Certification process is a recent addition of a requirement for tenure. Although many institutions and organizations offer similar types of online courses or programs, the faculty preferred the course held and delivered 'in house,' which corresponds better with the culture of learning at Heartland Community College. A significant number of faculty members have completed the ADC, and the thoughtful courses that they created are indeed a work of art! Ending the course, every cohort of participants gave anonymous feedback, and most of their suggestions are included in the next iterations of the ADCs. Feedback comments mostly regard issues such as:

1. The user-friendly course design and navigation ('which makes me think how I will lay out my online course').
2. Challenges are related to time management, navigating in a new learning environment, embracing new technologies, thinking about teaching and learning in a different way ('changing my stubborn ways') – all similar to what students face in online courses.
3. Collaborating with others and seeing others online and hybrid courses helped to support further the feeling that participants were connected in learning ('we were not alone, especially for us older instructors').
4. Possibility to present information and assess content in different and varied ways ('knowing that students have access to building a free webpage, making infographics, and screencasts definitely broadens the scope of assessments I can do').
5. The continued appreciation of the instructor, for his/her knowledge of hybrid/online course development, prompt and encouraging feedback as well as other character related skills (e.g., 'always focused on student learning,' 'patient,' 'caring,' 'passionate,' 'easy to work with,' 'supportive,' 'professional,' 'respectful' and 'great at speaking to my fears').
6. Rewards, not only in the form of the certification but also in the form of reflection process ('how to structure my course and how to think about objective through the course,' 'completing the first half of my course and presenting – I was very excited to present my final product. It was a lot of work, but I was proud of what I was able to develop,' 'hearing the applause at the end of my presentation from my instructional chair and dean,' 'it was very rewarding to see how my initial brainstorm of ideas turned into an actual class. It was a challenge for me, but a very rewarding one!').

Some of the most telling comments from participants include statements such as:

- 'I'm so much further along than when I started. I'm super excited to teach online!'
- 'I learned that even though we may think we know it all, after so many years of teaching, we really can always learn more. If online teaching is the future, we need to be prepared. I now feel prepared for the challenge to build an online course.'
- 'I plan to implement much of what I have learned in my face-to-face class,' 'this course allowed me to think outside of the box for online as well as f2f.'
- 'Though this course was online, it was no doubt a fantastic extension of our in-house training. I believe the set up for the course will enable our educators to have a better understanding of how to help more of our students succeed. In the end, that is the main goal not just for HCC but for all of the instructors as well.'

Online certificates

Two fully online certificate courses developed for faculty members in collaborative efforts with a faculty content expert (financed with grant). They cover the topics related to Universal Design for Learning and Instructional Design and Delivery. With a flexible start and ending dates within a single semester time frame, the faculty participant has occasions to learn about these topics, reflect on them, and then apply what they have learned. Participants have the opportunity to explore and better understand each topic, use journaling and blogs for reflection and envision the possibilities for redesign or creation of various aspects of a course. They can also experiment with creating drafts for further feedback toward the designing of a "deliverable" to implement within a chosen course (Barseghian, 2011). As time allows, participants could complete the course requirements within a week or throughout an entire semester. However, participants

invest more time commitment and work, and develop a more elaborate deliverable than in many traditional face-to-face workshops. Based on research indicating that short professional development programs (less than 8 hours) are not very effective, the time commitment for each fully online certificate is approximately 16 hours. That allows to access and reflect on diverse resources, complete reflective journal entries, and blogs (that serve more as a repository for ideas than a traditional collaborative space) and prepare 'deliverable' of the participant's choice (Parsad, Lewis, & Farris, 2001; Richardson & Placier, 2001).

Data collected thus far also indicates that faculty favor providing and developing more fully online certificates courses. Participants readily picked up on successful instructional design aspects (e.g., ease of navigation, 'chunked' information, easily accessible and diverse resources and purposeful use of technology). Participants' feedback also indicates an appreciation for the dedicated yet flexible time to create and design direct application to their class settings. One aspect that participants expected, but was lacking, was a stronger sense of community among the group of learners. The course developers considered those comments but, because of the course's entry and exit points flexibility, the suggested changes were difficult to apply. However, they modified interactive blogs to adjust them better for their unique purpose (to act as a repository of information rather than an interaction tool); and informed participants that additional interaction opportunities would be soon available outside that specific certification.

Collected Data

Data collection thus far for each online professional development offering has been through two means – the learning management system's statistical analysis features as well as through the analysis of the anonymous opinions and feedback through course evaluations. In addition to the feedback provided for specific professional development opportunities as described earlier in the section, the overall analysis of online professional development at Heartland Community College is included as well as what follows as a result of this research.

In general, the percentage of faculty who completed these online professional development courses mimics percentage of students who take online courses at Heartland Community College – the rate being approximately 82% (± 2%). However, the faculty members were more willing and provided more evaluative feedback than students in online course evaluations. The faculty felt the online professional development opportunities were positive. Also, students in online courses indicated similar positive aspects of online coursework. Both groups of respondents conveyed the importance of 'presence' and community within the course. Faculty participants perceived the instructor's presence as one of the key aspects affecting the positive perception of the whole experience. Comments regarding the instructor's role throughout the various online offerings indicated high expectations but also adopting the role of a 'guide' ready to provide thoughtful and encouraging feedback and suggestions in a timely manner to meet the expectations and application nature of various certifications. Since a virtual learning environment might be new to many of the faculty, their comments included the ability of the instructor to allay individual faculty's fears and concerns about figuring out both the technology and learning in this unique environment as well as the passionate conveyance of teaching and learning.

Faculty also explicitly commented on the quality of instructional design items in the course. They commented on the ease of navigation of each course, and they also appreciated the high quality and diverse resources included. As adult learners, they also commented on the relevance of the materials and reflections and, in particular, the opportunity for self-direction and choice in the final projects (e.g., 'deliverable' – Knowles, 1980). Similarly to students, while faculty may understand how to implement quality instructional design techniques within their own course development, they also appreciate those same elements when participating in online professional development. Even if it is a time-consuming task, modeling best practices of instructional design for adult learners is essential in offering professional development to faculty.

Suggestions for improvement have focused on providing further opportunities for collaborative environments both within and outside the online settings. Such environments allow to share the impact of learning and to see what other faculty members might be doing differently in their courses to gain further insights/ideas and to continue conversations surrounding teaching and learning topics. In case of the fully online certificates mentioned earlier, the flexibility of enrollment (that could happen at any point throughout a semester) as well as flexibility in progressing and completing certifications results in a lack of collaboration as it has been challenging to collaborate if participants were at different points within the certification process. Although communicated to participants that the collaborative spaces were more repositories of ideas in an asynchronous environment than real collaborative tools, this issue remained a repeated aspect of improvement in future online professional development offerings. On the other hand, developers have made some attempts to answer this particular feedback by considering the use of more traditional 'teaching circles,' through virtual, synchronous meeting times or by using campus-wide online forums (such as an online repository that is available at many institutions) to exchange ideas outside the certification process. The college continues to look for additional ways to support and build cross-disciplinary collegial relationships focusing on teaching and learning.

As related to flexibility of time, while it was anticipated that more participants would take advantage

of these online opportunities in the evening hours and weekend days, actually that was not the case. Data collected from the learning management system indicate that most participants accessed the variety of these online certificates on Tuesday, followed then by Thursday, Friday, and Monday. Relatively little activity was completed over the weekend. Identifying the time of the day that participants accessed the professional development was also interesting. It was assumed that many participants would access materials in the evening hours, but again data collected from the learning management system indicate that they did it primarily during the day, mostly in their non-working afternoon hours – between 1–4 p.m. Relatively little activity was observed in the evening and late-night hours. This data specifically brings into question faculty's need to have more flexible times for face-to-face professional development offerings. For adult learners, perhaps the perception of having online professional development that includes choice and flexible due dates within a more self-paced environment is important to consider.

Many organizations and institutions offer a variety of online certificates regarding topics related to teaching, learning and emerging technologies. While these may be more cost-effective for institutions, the 'homegrown' online professional development may be beneficial for some faculty members – especially if their institution provides adequate compensation (e.g., financial, time, and/or certificates/badges). Faculty and instructors who have limited access to funds and time for external professional development are more apt to take advantage of online professional development opportunities. Although full-time faculty have participated and still participate in more traditional courses, non-full-time faculty (namely adjunct faculty and adult education instructors) are embracing these new opportunities.

Experiences in these diverse online professional development opportunities are overwhelmingly positive. The participants encourage other faculty members to take advantage of online opportunities – not only for the convenience, the possibility of making individual choices and the quality of the learning experience, but also for the chance to directly apply the information learned into the creation of a 'deliverable.' Factors that are worth to consider for online professional development include elements such as best practices in online design, assessment as well as addressing the different adult learners.

Conclusion and Additional Considerations

Various types of online professional development for faculty can be highly successful (Dede, 2006). However, considering hybrid or online formats of professional development supporting faculty in their growth in teaching and learning, inclusion of a few key aspects is paramount. One of them is the marketing of online professional development. Its task is gaining support for these unique opportunities, especially if an institution has not traditionally considered hybrid or online environments. Personal meetings (with departments and individuals in their own offices) should be included to develop supportive relationships with faculty. Early adopters and users of technology could be a targeted group for hybrid/online professional development opportunities but time and efforts to continually build authentic relationships with diverse faculty should also be included. The positive reputation of the instructional designer and/or facilitator is essential for building professional relationships that support ongoing learning. Perhaps, thanks to these positive relationships, more faculty would venture into participating in hybrid and/or online professional development opportunities. Well-developed marketing efforts should include clear communication as to the benefits of these occasions geared for direct application for teaching and learning. Moreover, planning the promotion of these opportunities, one should consider the use of high-quality marketing tools such as graphic emails and announcements, as well as videos.

Another crucial aspect of high quality online professional development is to provide timely, quality feedback to participants. Perhaps, it is worth to consider scaling up the offer of online professional development to implement other resources such as online professional learning communities and instructional coaches/mentors to address better sustainability, support longitudinal change and/or maintain the integrity. Moreover, the administrative support regarding the compensation for professional development could also be important. Whether that would be financial or non-financial, i.e., possible additional recognitions including micro credentials or course release time if there is no direct payment. In many of the aforementioned professional development opportunities, the successful completion came with financial compensation. It is anticipated that if compensation were to be decreased or non-existent for this online professional development at Heartland Community College, faculty would not participate. That would probably be even more certain in case of the Alternative Delivery Certification process, which requires more time to complete.

It particularly applies to the content and nature of the Technology in Education Exposition described above, but also to creating online professional development that uses any digital tools (especially third-party/external digital tools). Explicit details and instructions related to concerns of digital privacy and Terms of Service (ToS) are also essential in these virtual learning environments, especially if the employer requires professional development. Instructors in these three types of online professional development demonstrated how to use the variety of different kinds of technology tools (in the Technology in Education Exposition) and often used online applications for their 'deliverable' (in the Alternative Delivery Certification and the fully online certificates). That is the reason why faculty members need clear information

and explicit instruction about user data that may be stored, tracked and collected by third-party products. Including more thorough presentation of this specific topic in online professional development would not only allow faculty participants to become more aware of it and give them additional opportunities for analysis and application, but also convey and transfer the same analysis and evaluation to their students who use technology applications in their own learning environments.

Finally, there are continued difficulties in measuring the impact and effectiveness of professional development on student learning. While the collected data is currently tied to faculty satisfaction with evidence of some positive gains in student achievement (Condon, Iverson, Manduca, Rutz, & Willett, 2016), correlating them with student learning and performance in higher education requires further research.

As many institutions expand their online courses offerings, providing high quality, online professional development for faculty is vital. Such opportunities may be beneficial for a wide variety of faculty as they seek convenient and relevant learning that may improve their teaching capabilities. The potential impact of these online professional development opportunities is far-reaching and may refer not only to hybrid and online course development but also to learning in more traditional, face-to-face learning environments.

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Abstract

Many professional development opportunities for faculty are offered in a traditional, face-to-face learning environment. However, similarly as virtual/online learning environments may be an answer to the various student's needs, it may also apply to fulfilling teaching and learning needs of the faculty. This paper provides insights regarding three different types of professional development for faculty in a virtual/online environment implemented at a two-year, small college in the Midwest of the United States. Because we look for how to engage and deepen student learning in online, blended, and/or distance education and training environments, our professional development should mimic and model best practices of developing and learning in these unique environments (Anderson, Krathwohl, & Bloom, 2001). Although, traditional face-to-face professional development for faculty may still be in use, this paper provides guidelines and suggestions considering developing virtual/online professional development for faculty, in order to offer them additional learning opportunities.

Keywords: professional development; online courses; hybrid courses; technology in education

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Developing a Reflective Practitioner through Telecollaboration in Language Teacher Preservice Education – A Bottom-up Perspective

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The article presents the experience and reflection on an international telecollaborative project in the light of training the language teachers as reflective practitioners. Student teachers of the Institute of Applied Linguistics at the University of Warsaw (UW) collaborated with student teachers of the Faculty of Education and Social Work at the University of Valladolid (UVa) within the framework of the EVALUATE project in the winter semester 2017/2018. The exchange aimed at developing professional teaching skills, language and digital competences. However, in the described study the exchange is observed from the perspective of the student participants and their teachers. This paper focuses on the impact of such intercultural exchange on developing the reflective competence by preservice teachers. It also highlights the interrelation between the research track and content track within the framework of the project. The outcomes of the experience go beyond this particular exchange and may be generalized to a wider educational environment which involves telecollaboration at various educational and professional levels.

Introduction

Telecollaboration in educational institutions has been gaining more and more interest among teachers and educators at all levels for various reasons. It enriches the curriculum, creates a vivid culturally rich learning environment via contacts with peers, which increases the need and motivation to learn foreign languages and allows for a meaningful use of technology. The focal points in each project vary depending on the needs of participants and organizational settings. In telecollaborative projects much depends on learning by doing. This refers to Dewey's idea *Recognition of the natural course of development … always sets out with situations which involve learning by doing* (Dewey, 1974, p. 364). The students cannot be taught, they can be coached. The question is how to design a learning environment to develop a reflective practitioner for telecollaborative activities at various stages of education in order to guide teacher trainers preparing teachers for the present and future challenges as the preservice teachers might participate in many international exchange projects initiated by the teachers individually or supported by various organizational bodies. Telecollaboration, as we see it, is in deep connection with the project-based learning methodology (PBL) – developed from Dewey's ideas – both in the procedure starting from an authentic situation and evolving into the elaboration of a product and in its education potentiality in terms of social interaction and cognition. Fragoulis and Tsiplakides (2009), who like us, are using the PBL for language learning purposes, mention an extensive list of benefits provided by the use of this methodology. Among all of them, those that draw our attention have to do with the fact that project activities offer opportunities:

- for 'the natural integration of language skills' (Stoller, 2006, as cited in Fragoulis and Tsiplakides, 2009, p.114),
- to perform authentic activities that imply 'appropriate levels of difficulty or involvement' (as cited in Fragoulis and Tsiplakides, 2009);
- 'to examine the tasks from different perspectives' (Reeves et al., 2002 as cited in Fragoulis and Tsiplakides, 2009) and develop 'problem-solving and higher order critical thinking skills' (Fragoulis and Tsiplakides, 2009, based on Allen, 2004).

Using the Activity Theory methodology, the work by Gibbes and Carson (2014) shows how the PBL (or more specifically the Project-Based Language Learning, PBLL) provokes contradictory responses of the students due to their different perceptions of the learning experience depending on whether work aligns or not with their personal motivations. In the article, reflection itself is seen not just as a means to assess the project's success but as the means to develop professional competences as English teach-

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ers at the Tertiary Teacher Education level, namely: to reflect on the use of diverse methodologies and strategies for English language teaching.

eTwinning is an example of a very flexible exchange program in which the project-based learning is extensively applied, and which is aimed at primary and secondary educational levels. It has received a huge popularity since 2005. There are 195,393 schools participating, 593,144 teachers participate in 77,153 projects.[1] The projects vary because they all fit particular needs and interests of the teachers and learners as well as the curriculum requirements. The program involves all age groups from the youngest, aged 3–12 years up to vocational school learners aged 19–20 years. Depending on the needs and circumstances, the participants share photos, pictures, and short films. They can also take part in collaborative lessons through Twinspace videoconferencing tools. Learners older than 12 years may post messages, comment on peers' posts, and interact online from home. The framework of the program allows for flexibility but also emphasizes strict reference to the formal curriculum. Teachers may recommend the use of a variety of digital tools according to their needs, such as email, social networks, Padlet, Google Docs; however, Twinspace with its user-friendly blog, diary, storage and videoconferencing facilities enhances cooperation and it is sufficient for the majority of participants. eTwinning allows to overcome geographical limits as the partners cooperate across borders. Although partners may choose the language of communication, it is mainly English. That is an essential added value for learners in the country or community where there is one dominating language, namely Polish on the one side and Spanish on the other (Gajek and Poszytek, 2009; Gajek, 2010, 2012, 2017). Participation is voluntary. However, in Poland eTwinning has been introduced to the curriculum for languages since 2018. In such programmes teachers – eTwinners are either pioneers or learn from examples and experience of their colleagues.

With the growing number of schools and teachers participating for example in eTwinning, the focus has turned towards teacher training for telecollaboration. Thus, there is the need to prepare teacher trainees for telecollaboration as part of their academic, professional preparation to allow them to gain linguistic, intercultural and professional competences in a way which is more cost-effective than other exchange programs. A new track aimed at teacher training institutions which has been incorporated into eTwinning is an example of such an attempt. Moreover, there is also the need for research on the effectiveness of telecollaborative practices undertaken at the tertiary education. However, rigorous research procedures substantially change the learning environment for the participants at the bottom of the research structure. That may have a different meaning for each of the stakeholders. As Dewey (1974, p. 151) says: *He [the student] has to see on his own behalf and in his own way the relations between means and methods employed and results achieved*. Thus, students and teachers participating in the exchange need to make their participation meaningful in order to get involved and benefit from it. The study shows how students develop a reflective approach by making the exchange meaningful for them.

Telecollaboration for language learning and for professional development of teachers

Telecollaboration for language learning and for professional aims has a long tradition. Diverse studies refer to the role of the learner and the learning tasks, teaching methodology and chosen media (Furstenberg, 2001; Belz, 2002; O'Dowd, 2005; Guerin at al., 2010). Some attention is given to the role of the teacher (Müller-Hartmann, 2007; Dooley, 2010; Dooley and O'Dowd, 2018). Mont and Masats (2018) provide a practical description of teacher's roles and activities in telecollaborative projects. Their tips clearly demonstrate that the role of a passive technician (Schön, 1987) who learns the content knowledge available in the literature and passes it onto the following generations is not sufficient. Such teachers do not have any chance to use their own experience, creativity or critical reflection in their practice. The only role assigned to such classroom teachers is to make sure that students comprehend the content knowledge without questioning the validity or relevance of it to their students or to their own context (Kumaravadivelu, 2003). This approach renders teaching into a 'lifeless' practice by killing the curiosity and creativity of teachers (Kincheloe, 2008). Dooley (2010) stresses the need of change as teaching is no longer associated with transmission of knowledge. The emphasis is, instead, on knowledge building, where interaction goes in three ways: teacher-student, student-student, and student-teacher. Dooley observes that web 2.0 invites a teaching style that stimulates and orients students towards critical thinking.

Thus, training abilities to reflect on own practice becomes essential for teachers. For Dewey (1933/1997) reflective teachers take responsibility for their actions and consider alternatives rather than acting without thinking. Reflective teachers have three distinguishing characteristics: open-mindedness, responsibility and wholeheartedness. They are able to accept and implement different ideas. They are not afraid of novelty. Open-minded people ready to revise their beliefs when they encounter new data, and they are open to accepting the possibility of making mistakes. As Larrivee (2008) explains they

[1] data collected on September 26th, 2018

are aware of the fact that they may not be right, and they are not in a race to win a debate. Open-minded reflective teachers listen to their students and peers, and they are capable of adjusting their practice to different conditions.

Responsibility means 'taking ownership of the consequences of one's actions.' Responsible teachers are aware of the fact that their actions might have unintended consequences for others, and they can react accordingly. Wholeheartedness means constant willingness to improve a situation. Wholehearted reflective teachers look for different measures to help their students. They do not give up until they find a solution (Larrivee, 2008). Even when they face a lot of uncertainty, confusion, and frustration, wholehearted teachers search for the best actions.

Reflection on the practitioner's activities involves reflection-in-action and reflection-on-action. The former is a response to challenges which arise while we do something. It may contain the element of surprise. The latter occurs when we look back on what has been done and how the actions have contributed to the outcomes (Schön, 1990, p. 26).

Bortoluzzi and Mullen (2018) define 'a reflective telecollaborative teacher' as a practitioner, *who 1) is actively involved in identifying and discussing intercultural development with her partner(s), 2) critically reflects on methodological issues pertaining to intercultural competence and the telecollaboration process, 3) revises the telecollaboration process of intercultural and language learning for herself and her students in a continuous learning loop, 4) consciously transfers the intercultural knowledge and critical reflection on telecollaboration to offline classroom teaching* (Bortoluzzi, Mullen, 2018; following Kolb, 1984; Edge, 2011; Liddicoat and Scarino, 2013). The authors exemplify their ideas on the basis of the Canadian-Italian Exchange for Language Learning (CIELL). Current analysis will be based on the participation of the Authors in the EVALUATE project with some reference to earlier telecollaborative exchange projects.

EVALUATE project

EVALUATE is an acronym for Evaluating and Upscaling Telecollaborative Teacher Education. It is an Erasmus+ KA3 (EACEA/34/2015) project which aims at carrying out a European Policy Experiment. This project will evaluate the impact of telecollaborative learning on student teachers involved in the Initial Teacher Education (ITE) in the participating European countries and regions.

It investigates the impact on future teachers' digital-pedagogical, intercultural and linguistic competences. The entire top-down results based on planned 1000 student participants will be presented in the second half of 2019 (O'Dowd & Müller-Hartmann, 2018). That is why the aim of this study is to partially evaluate and reflect on its impact from the bottom-up perspective based on one of the many exchange sub-projects within the EVALUATE project.

Model of exchange applied in EVALUATE

The theoretical background of the project is the Progressive Exchange Model which has been widely used in the telecollaborative practice and research to date (O'Dowd and Ware, 2006; O'Dowd and Lewis, 2016). The model involves three interrelated task types which move from Information Exchange, Comparing and Analyzing Cultural Practices and working together on a Collaborative Product. Telecollaboration is also referred to as the Virtual Exchange or Online Intercultural Exchange. It involves engaging students in task-based interaction and collaborative exchange projects with partner-classes in other locations through online communication technologies under the guidance of their teachers (O'Dowd and Lewis, 2016).

Especially, the three tasks are to develop pedagogical-technical competences, transversal competences – ability to learn and initiative-taking and intercultural competences (Figure 1).

Teacher trainer participants were introduced to the EVALUATE project and trained in various aspects involving telecollaboration, including the 3-task model. They received a manual, were offered a training week and were equipped with introductory tools for student teachers. They could also meet their partners face to face or online and work together on the project's Moodle platform. Telecollaboration took place at two different levels: at the teacher trainer level while designing their own project based on the 3-task model, and at the student teacher level with the aim to accomplish the tasks in international teams. During the development of this particular exchange, a mentor belonging to the EVALUATE team monitored the trainers' work. They maintained frequent contact with him or her mainly as regards access to the Moodle platform itself and the work required from the students to the project team. Students had to fill in an initial pre-test, and then three diary entries after each task. After the exchange, trainers and the mentor met virtually to discuss impressions and students' feedback about the experience that was recorded and sent to the mentor. Both, students and trainers got certificates of participation in the EVALUATE project.

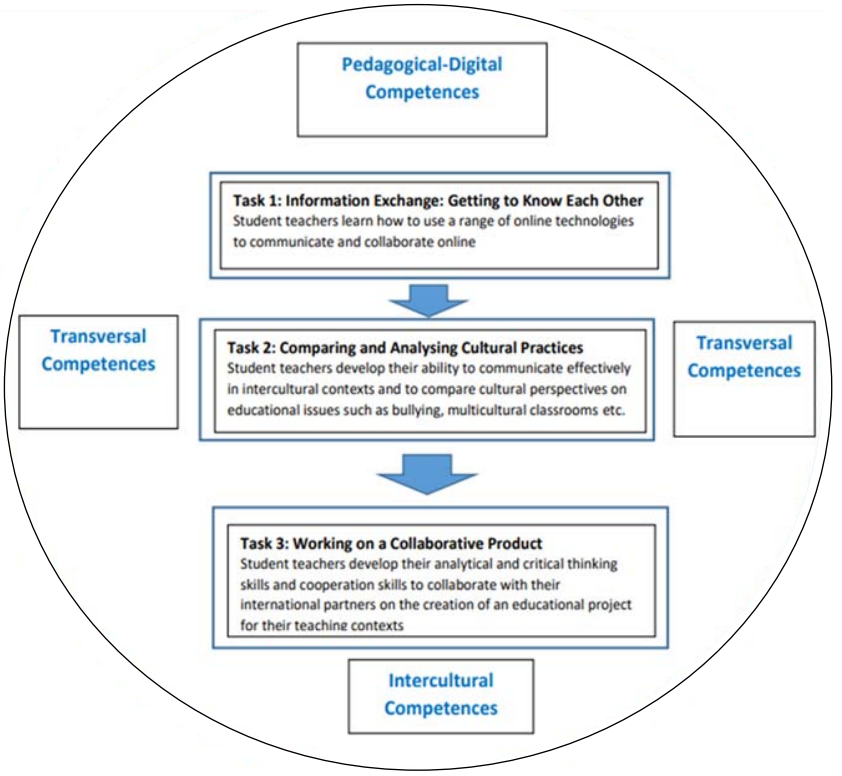
How the 3-task model was implemented

The first two tasks were done on the EVALUATE Moodle platform. To complete the third one the students were allowed to use all means of communication which were convenient for them.

As said before, trainers were introduced to a pedagogical model that consisted of three tasks (Figure 1). Here is a brief summary of their design following the EVALUATE guidelines (O'Dowd, Müller-Hartmann, 2018). The activities comprising the tasks mostly adopted the Moodle forum type:

– Task 1 (Information exchange: Getting to know each other) consisted of two different activities. Activity 1 – 'A portrait of yourself' – was performed individually and implied that

Figure 1. Interrelation between the tasks and competences



Source: O'Dowd, Müller-Hartmann, 2018.

the students should give information about their personal interests and experience based on a photograph of their choice. Activity 2 – 'Getting to know our Universities' – required national team work and involved a search for information about their universities. Students were asked to comment on their partner peers' contributions in the forum provided for each activity.

– Task 2 (Comparing and analyzing cultural practices) aimed at exchanging and analyzing information about how literature was dealt with in a Primary class in their home countries. It involved pair work in their home universities and international work in small groups of four people, that is, each international small group was arranged in two national couples. A forum was provided for each small group. It consisted of two activities (3 and 4) performed by the national couples which needed to be followed by a small-group discussion in the forum. In Activity 3 couples were asked to select a short story or tale often used during Primary lessons in their home country, make a summary of the plot and play emphasis on any remarkable aspects, and explain to their partner couple about their choice and what made the story interesting for Primary school children. Activity 4 required planning a 3-activity 'teaching sequence' for a Primary lesson on the grounds of the chosen story and following the teaching guidelines used at their home University. This was particularly interesting for the trainers, as we expected students to notice similarities and differences in the didactic models used in the Primary classrooms.
– Task 3 (Working on a collaborative product) involved international team work. In this case the previous small groups had to work as real teams in a collaborative way, inventing or choosing a story and making decisions on the design of the teaching sequence respecting basic guidelines, using similarities and incorporating assets from each model. In this task students were also expected to address two important issues: firstly, to relate the activities to at least two of the EU key competences; and secondly, to put forward a plan for attention to diversity, which meant considering how to develop inclusive education for children with different origins, educational special needs, different learning styles, etc. In other words, how the sequence of activities would enhance children's understanding of inclusion and the need for it. For this activity, students were encouraged to use any social network or communication resource that would have helped them to communicate fluently with the other members of the team.

The study

Aims and instruments

The aim of the study was to focus on the process of developing a 'teacher' as a reflective practitioner through participation in a European research project on telecollaboration. The term 'teacher' is here applied to student teachers. The study is qualitative as the instruments of the analysis essentially include the performance of tasks, reflective diary entries, in-class ongoing discussions, and final presentations as well as group interviews.

The analysis of the data in the Polish group was based on:

1. the observations of the students' activities on the Moodle platform;
2. in-class ongoing discussions;
3. students' diary entries that are obligatory in the EVALUATE study, which have been forwarded to the teacher trainer;
4. final evaluation conference (audio-recorded).

The analysis of the data in the Spanish group was based on:

1. the observations of the students' activities on the Moodle platform;
2. in-class ongoing discussions,
3. final evaluation conference, which included: final reflective presentations followed by teacher questions that triggered further reflection on the whole telecollaboration procedure, in English (video-recorded); and not recorded informal discussion in Spanish.

What makes this telecollaboration exchange different from others is that writing the pre-test and diary entries after each task reflecting on their own performance and the whole EVALUATE project was compulsory for every student.

In the diary entries they answered reflective questions, for example:

- What have you learnt about selecting technologies that enhance what you teach and how you teach?
- What do you feel you have learnt about your own and your partners' national and educational cultures?
- How do you feel about working in an intercultural team?
- Has this project affected in any way how you will use online tools and environment in your own teaching career in the future?

What is more, organizing the final class meetings and recording them were also recommended by the EVALUATE project coordinators. That is what brings reflection to the front, and that is why collecting data for this particular study was meant to be the least intrusive. The questions for the final meetings and group interviews suggested (but not strictly required) by the EVALUATE coordinators were as follows:

- Tell us about your experience with the telecollaborative exchange you did this semester.
- What do you feel you have learnt from it?
- What were the most positive aspects?
- The most challenging?
- What do you think about the activities you were asked to do with your peers?
- What tools did you use to communicate with your peers? Why did you choose them?
- How would you describe your relationship with your peers?
- What would you advise the project coordinators to change about the project for future iterations?
- Do you see yourselves as continuing this type of activity when you are teaching in a school?
- Why/Why not?
- What would you see as the major challenges?
- Do you feel this experience has improved your digital-pedagogical competence? In what way?
- Do you feel this experience has improved your intercultural competence? In what way?
- Do you feel this experience has improved your foreign language competence? In what way?

The teachers were free to select the ones relevant to their needs and the needs of the students.

The telecollaboration teaching process – the student participants

The participants were divided into nine international groups consisting of two students of the University of Valladolid and two students of the University of Warsaw. Students at both universities were pre-service English teachers at the primary level. However, they differed in the year of study and their level of English, being in both cases higher in the Warsaw group.

Students in the Polish group were at B2.2 up to C1 level according to the Common European Framework of Reference for Languages (CEFR; Council of Europe, 2001). It was their last course to gain teacher qualification at BA level. Their intercultural experience was varied as some of them studied abroad within the framework of Erasmus+ programs, other participated in voluntary activities abroad. But some of them had not had much contact with foreigners before the exchange. The content of the project work was fully compliant with the regular course syllabus. The course requirements in terms of planning activities for young learners and writing a reflective commentary (diary entries) were the same for the project participants and other students.

The Spanish group consisted of 20 Spanish students with B1.2 level of English (CEFR) arranged in couples. The project was a part of their ordinary English course at the Teacher Education. It is important to notice that the University of Valladolid is located in a monolingual area of Spain where there is hardly any exposure to English or any other language. Students were used to working in small teams and presenting their work in front of the class.

The results

For both partners, participation in the exchange created a learning environment in which students were working in international groups. They got hands on experience in the project work. Students developed transversal competences such as international project management and solving problems in telecollaborative projects. It was important for students that they participated in a big international research project.

Both groups enjoyed the exchange. They learnt a lot about the partners' country and university. They identified similarities concerning many areas such as interests, goals, education systems, methods and content of teaching; however, less attention was paid to the more institutional part of the university (Task 1, activity 2) and demanded more tasks for personal interaction leading to getting to know each other. The majority of them (80%) did not mention any stereotypes about the other culture. They used various patterns in sharing the work in international groups.

Polish group

In the exchange, all Polish students developed discursive competences, e.g., how to communicate with peers whose command of English is slightly lower in a polite and respectful way. They learned some Spanish while translating vocabulary and in written communication, especially when they could not understand the excerpts of English texts with Spanish inferences. Those who knew Spanish appreciated the opportunity to practice it in spoken and written communication with their partners. They also valued the importance of the right level of English, sufficient level of computer literacy and appropriate types of activities for the successful implementation of telecollaborative projects in teaching. Students learned as well about the EU 8 competences for lifelong learning and their application in teaching young learners.

However, Polish students did not improve their language skills in English. They noticed that people of Polish and Spanish origin as non-native speakers of English make different mistakes while using the language. In some groups Polish participants divided their work, so collaborative skills were not developed at the expected level, e.g., in some groups, only one Polish student communicated with the Spanish partners. Some of them had little opportunity to develop intercultural competence because it was already quite high. However, all of them learned something about Spain, the country of their partners. Participation in the project was voluntary, to some extent, so students with high intercultural competence joined the project without hesitations. As they were allowed to select ICT tools for communication in the third task, they used the ones which they were familiar with, such as Moodle, Facebook, Google Drive, WhatsApp, WhichApp, Skype, Gmail. Therefore, they could hardly say that their digital competence has improved.

Concerning the outcomes of the exchange, their critical commentaries refer to the fact that speaking part is missing in the project: 'we were not able to establish any sort of connection in written communication,' 'speaking was missing in the project.' On the one hand, they said they would prefer more intensive spoken interaction. On the other hand, they realized how difficult it was to organize synchronous sessions. As the tasks were prescribed by the methodology applied in the project and the teachers, students found the interactions as forced, and they perceived the exchange not long enough to build closer relationships. They would prefer more activities based on spoken communication.

Moreover, they claimed that strict deadlines were needed: 'the coordinators should have set deadlines.' However, they declared that based on this experience they would use collaborative projects in their teaching practice in the future. They also expressed their willingness to have more international exchange projects during their studies, not only in a teacher training course.

Spanish group

The added value for the entire Spanish group involved in the project was the use of English as a Foreign Language, the development of comparative skills and knowledge of Primary education systems and opportunities for intercultural exchange.

As opportunities to use the English language in real life are relatively small in the Spanish context, students acknowledged telecollaboration as a great chance to prove their communication skills in English and claimed that they improved their English by communicating with Polish students displaying a higher level of English. Nevertheless, some of them were happy to switch into Spanish if the Polish partner could use it.

The intercultural exchange was an opportunity that not all the students were able to make good use of. It depended primarily on the motivation and initiative of the groups. Some learned a lot of facts and practical tips about Poland, and one group even planned a trip to Poland in summer; however, another group failed to receive information about the partners' country or failed to ask for it. These conclusions illustrate that students' initiative and interest is essential in telecollaborative projects but also indicates that non-reliability in one's language skills may lead to failed communication. However, most of the students declared that they would start telecollaboration projects in their teaching practice.

They noticed the same pedagogical underpinnings of teaching young learners as well as small differences in the Polish and Spanish versions of some traditional fairy tales (such as Cinderella). They also recognized the fact that there was a difference in the timing of school lessons (Polish lessons being 45 minutes long and Spanish lessons being 55 minutes long).

As regards the use of ICT, students were already familiar with Moodle in the university context but

found it too rigid to work with when dealing with fluent communication. They would prefer being introduced to the use of another platform with better communication tools.

From the social point of view, in most of the cases, the students' declared that the virtual relation between partner student teachers in a formal environment should have lasted longer, giving students more opportunities to get to know each other in a more personal way and expanding telecollaboration beyond one course.

It is interesting to notice that this teacher collaboration lead to an Erasmus+ KA1 Agreement for student and teaching staff exchange between the Institute of Applied Linguistics (UW) and the Faculty of Education and Social Work (UVa) and only in the first call (20 December 2017) 16 second-year students from Spain applied for the University of Warsaw as one of the destinations of their choice, which might have been influenced by this telecollaboration experience. There is no exact data to prove that, though.

Developing a reflective practitioner through the exchange – the trainees' perspective

Although required for the research part within the framework of the EVALUATE project, the necessity of writing a pre-test and the diary may seem tedious. The entries in a journal were obligatory to provide the EVALUATE coordinators with hard data on the effectiveness of the telecollaborative exchange. From the students' perspective, such entries do not contribute to the growth of linguistic or cultural knowledge and skills, but they strongly support the development of reflection. In the students' diaries, reflection-on-action was well documented. The research setup justified the need for reflective diary entries.

Examination of the students' materials on Moodle allows for confirmation of their quite high intercultural competence. They often visited and commented on partners' profiles. The quality of their entries and the way they reacted to specific situations, which might have developed into conflicts, demonstrated high intercultural competence, which prevented any problems.

During the final conference, the students suggested that the project should have been longer to build closer relationships. As the final product was a written work, their activity was more focused on writing, and not on spoken communication. For them, written communication was less valid and less attractive than spoken conversation. They found written communication as more impersonal, which did not build real bonds between participants. As the activities were prescribed to fulfill the common grounds of the exchange as a whole within the framework of the EVALUATE project, some of the students would have preferred more autonomy. On the other hand, those who felt lost a bit in the third activity would have preferred entirely controlled actions. It turned out that some students not used to collaborating did not share the work but split it among the team members. An interesting fact was that both groups of students would require keeping deadlines more strictly but mainly by the other side.

In the learning conditions created by the exchange project, students learned the essential skills such as critical thinking, problem solving, communication and collaboration, which were perceived as the key to success (*The Partnership for 21st Century Learning*, 2015).

Developing a reflective practitioner through the exchange – the trainers' perspective

Since 2008 the Polish teacher trainer has initiated and participated in many telecollaborative exchange projects with the following educational institutions: Corning Community College in New Jersey and Community College in Las Vegas, US, Universities in Beijing, China, Budapest, Hungary, Moscow, Russia, Milan, Italy, and Tartu, Estonia. Reflection-on-action has already been published (Gajek, 2016). This experience was more focused on being a part of a broad policy experiment both in terms of reflection-in-action and reflection-on-action. This involves such new activities as induction to the exchange in the teacher training session. The tasks were built according to the guidelines and supervised by the coordinators, not prepared autonomously by the exchange partners. The dialogue with the partner and the project coordinator was limited to the implementation of the plan and fulfilling the research aims. Thus, creativity and the opportunities to respond to the needs of the students were limited. Moreover, it was surprising that the participating teachers were not perceived as team members by the coordinators, so they did not have access to the data submitted by their students. However, creating the detailed plan of the exchange and ongoing discussions with the Spanish teacher trainer contributed to the identification of many similarities and a few differences in the approach to teacher training and the course content.

The Spanish trainer had never before taken part in telecollaboration projects, though she was well acquainted with Erasmus and international relations at the university level. She attended a training week taught by the EVALUATE team and read the documents provided by them. Though she considered the Moodle platform good enough for designing the students' tasks following the EVALUATE guidelines, she found the interaction between partner students through the platform tough and not fluent enough. Besides this, the high number of students under her supervision at the university at the same time, many of them not participating in the project, made it difficult for her to monitor more intensely the development of the tasks in progress. However, she observed satisfaction and involvement in most of the students partaking, although their contribution was uneven depending on different factors such as attendance to lessons, difficulties in teamwork schedule, academic and non-academic responsibilities, self-reliability, etc.

The learning experience of the trainers refers to the four points presented by Bortoluzzi and Mullen

(2018) through discussion with the partner and the coordinator: critical reflection on the intercultural competence and the telecollaboration process, cyclical work on knowledge exchange and transfer, and reflection to offline teaching.

Conclusions

The bottom-up perspective on participation in the policy experiment is limited to this particular experience inside the Erasmus+ KA3 EVALUATE project, and is uneven as regards the data analysis, since the compulsory EVALUATE diary entries were not transmitted to the Spanish teacher trainer. Nevertheless, it demonstrates that the process of collecting data for documenting progress might contribute to the development of reflective practitioner in teacher training settings. The research track openly introduced to students gives them a sense of belonging to a broader European research project, which justified their effort put into filling the test and diary entries. The entries documented their progress in becoming reflective 'telecollaborative' practitioners. Even though writing the diaries after each task was a time-consuming activity they had not experienced before, it contributed substantially to the development of the students' reflective approach to what they did in the exchange project. The top-down results of EVALUATE will be made public in September 2019, but this study contributes to the bottom-up insights into correlations among the international project actions, developing a reflective approach to teaching and showing some side effects of the research procedures. Students participated in the exchange project not only as research subjects and providers of data for EVALUATE but as practitioners who could make the exchange meaningful for themselves and make the most of it in various aspects of their professional and personal development including the reflective approach to learning and teaching.

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Abstract

The paper presents the results of a telecollaborative project between BA students of the University of Warsaw and students of the University of Valladolid within the framework of the European Erasmus+ EVALUATE project. The aim of that project is to justify the effectiveness of telecollaborative activities for professional development of future language teachers. The experience confirms that initial intercultural competence is essential for undertaking such a project. It also validates the need for blending professional preparation of language teachers so that they realize that the teaching methods and pedagogical approaches which are introduced in their pre-service courses are very similar or even the same irrespectively where they get their qualifications. Such blended learning activities are complementary to national teacher training programs and to Erasmus+ students exchange projects.

Keywords: telecollaboration; reflective practitioner; teaching English; teacher training; international exchanges

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OPENArt – a Tool Supporting Education in The Field of Culture and Art




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As part of the project 'OPENArt – Contemporary Art for All,' a multimedia guide was developed in the form of an application for portable devices. It facilitates access to works of art exposed to people with hearing and visual impairments. It also improves the experience of receiving art by people without disabilities from Poland and abroad. The application corresponds to the real needs of users, as is was developed in accordance with the participatory design methodology and principles of universal design. This article describes problems in the access to art of various user groups. The authors present innovative features of the guide and characterize its educational values. The paper says how the application can be used to educate the blind, visually impaired, the deaf and hard of hearing, as well as by people working with non-disabled children in arts and language classes.

Availability of museum exhibits to the disabled

Many museums in Poland and all over the world make use of mobile technologies. In 2009 mobile applications were already used in the USA, France, UK, and the Netherlands (Piasecki and Dylewska-Libera, 2015, pp. 17–30). These applications not only present the museum exhibits but also engage the visitors in more in-depth exploration and understanding of particular works of art.

The solutions applied in museums are, first of all, the overall museum guides including essential museum/gallery information, maps of buildings and descriptions of the most recognized exhibits. More advanced solutions ensure access to extra materials and interpretations using the so-called augmented reality. There are also applications which are tools for games and plays, enabling explorations of the museums and galleries through drawing, solving riddles, doing puzzles, and others.

Since 2011–2012 such systems have been occurring in Polish museums as well (Piasecki and Dylewska-Libera, 2015, pp. 17–30). Unfortunately, neither Polish nor overseas applications offer universal solutions for users with different levels of knowledge and different disabilities.

The following are some examples of solutions used both in Poland and abroad:

- Unilever Series at Tate Modern by Tate Gallery – a guide describing all works from the Unilever Series. It includes photographs, videos, texts by curators and the museum director;[1]
- Museo del Prado – Second Canvas – the application allows to view works from the permanent collection of the Prado Museum;[2]
- Murder Goes Mobile at the Met! – a detective game developed for the Metropolitan Museum of Art,[3] designed mainly for young audience;
- The Museum of the Warsaw Uprising Warsaw'44 – an application guide.[4]

The solutions developed so far raise the attractiveness of the presented exhibits by applying new technologies (multimedia and mobile tools) (Stefanik and Kamel, 2013). Such an approach to museum exhibitions responds to the needs of new-type visitors; however, these solutions are far from being common. The problem boils down to their high implementation costs which, obviously, makes them unavailable to small museums or local halls of memory. Up until now there have not been universal solutions that would consider the needs of all visitors and could cope with the issue of cultural exclusion of people with sight and hearing dysfunctions.

People with sight and hearing disabilities, as well as those physically handicapped, are very often culturally excluded, which means they are excluded from an important aspect of social life. No access to education about culture and art results in social exclusion and

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[1] http://www.tate.org.uk/
[2] https://www.museodelprado.es/en/app/secondcanvasprado/
[3] http://www.digitalmeetsculture.net/article/murder-goes-mobile-at-the-met/
[4] http://www.1944.pl/

lowers the opportunity to have sustainable development and education for all citizens (GUS, 2016).

It is commonly perceived that the needs of physically disabled people are obvious and most public institutions, including museums, take it into account by providing, for example, facilities for people on wheelchairs. Some museums make it possible for blind visitors to touch selected exhibits; however, adding extra information which exhibits exactly can be touched is necessary. In the case of the deafness and hard of hearing there is a problem that they might find it difficult to understand written texts. This disability seriously impacts the development of people, who often do not understand written and spoken words and cannot formulate their own statements (Górka et al., 2010; Szczepankowski, 1998). One has to bear in mind that for people who use a sign language since birth, the Polish language (or any other human language) is, in fact, a foreign language.

OPENArt – modern art for all

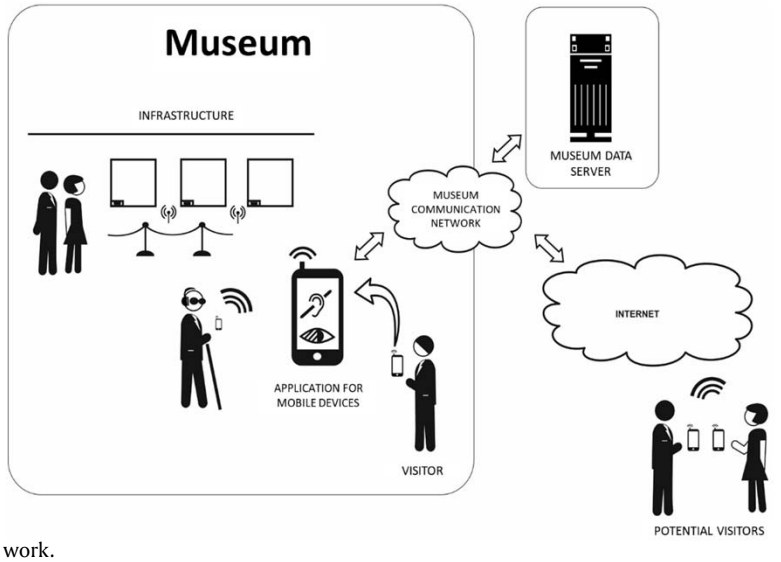
In the case of modern art, there are not only physical barriers that the disabled have to overcome but also the general opinion that modern art as such is difficult and incomprehensible. Such opinions result from the lack of adequate knowledge about this type of art. Contrary to classic art, which has been thoroughly described in literature and media, modern art remains a field of discretionary interpretations and approaches to particular works of art. The idea to relate a work of art to properly prepared information about it allows better understanding of modern art. This is helpful particularly to those people who experience modern art for the first time. Such a presentation of contemporary art museum exhibits was the primary goal of the OPENArt project, financed by the National Research and Development Centre within the 1st call of the Social Innovations programme. The project team developed a universal (the same for all groups of users) multimedia guide in the form of an application for portable devices (smartphone and tablet). The guide facilitates access to works of art exhibited in museums. It is dedicated to the blind and the deaf people but can also be used by non-handicapped people from Poland and abroad.

The project was implemented by a consortium comprising research institutes (Institute of Innovative Technologies EMAG – the consortium leader and National Information Processing Institute OPI), public universities (the Jagiellonian University in Krakow and University of Warsaw), a non-public university (Polish-Japanese Academy of Information Technology), three big museums (National Museum in Kraków, National Museum in Warsaw and Museum of Contemporary Art MOCAK in Kraków), a foundation working for the benefit of the handicapped (Siódmy Zmysł), and a commercial company (Centrum Transferu Technologii EMAG sp. z o.o.).

The guide developed as a result of the OPENArt project applies the knowledge and experience of all consortium members. It provides a number of functionalities (work of art description, video, and materials) which expand the possibilities of perception of art. The idea of the OPEArt mobile multimedia guide can be seen in Figure 1. What distinguishes this guide from other 'classic' electronic educational materials is a strict connection of the multimedia content with the physical space of museums and galleries explored by the visitors, in the form of mixed reality. According to the mixed reality concept, the visitor receives extra information about the exhibit when he/she gets physically close to it.

The selected exhibits are radio-marked. This enables their automatic identification and gives access to the voice guide around the museum. Thanks to that, it is possible to match the guide contents with the currently visited exhibition and to navigate the blind through the building.

Figure 1. OPENArt mobile multimedia guide – operating principle



Source: authors' own work.

OPENArt users

The OPENArt application is addressed to all potential users but targets three social groups particularly:

- seniors and handicapped people, especially the blind people and partially sighted as well as the deaf people and hard of hearing;
- children and young adults;
- foreigners.

This choice is due to the fact that most museums still use obsolete forms of presentation. Some museums offer audio description for the blind people, but most descriptions are too long, unattractive and do not allow unassisted navigation in the building. The proposed new solution is an innovative idea and fills the gap in the access to modern art of all social groups.

The OPENArt guide gives access to the world of culture and art to all people, including those with disabled sensory integration. The guide contents are available to the deaf in the form of subtitles or a sign language. OPENArt was equipped with an innovative technology which enables to position the visitor in the building and, this way, to automatically match the guide contents with the visited exhibition and give the user the navigation hints.

According to the data from Poland's Central Statistical Office (GUS) there are over 1,800 thousand people with sight disabilities in Poland (Informacja Rządu RP, 2013; GUS, 2003; GUS, 2016). The majority are those who lost their sight in the course of their lives. A significant group of these people leaves their homes very rarely and only a mere fraction takes active part in cultural life. People staying at home very often use computers with screen readers and internet access. More and more blind persons make use of facilities offered by smartphones (e.g., menu with a screen reader, embedded speech synthesizer or GPS).

The problem of hearing loss involves over six million Poles. It is estimated that the number of deaf people may oscillate between 45 and 50 thousand. Almost 900 thousand people in Poland suffer from severe hearing disabilities. Every sixth school-age child has hearing problems. For many deaf people, particularly those who were born deaf or lost their hearing in the pre-lingual age (i.e., before they learned to speak Polish), Polish is a foreign language (Januszkiewicz et al., 2014, pp. 5–13). Their first language is the Polish sign language. People who want to visit museums with a human guide need to be assisted by a sign language translator. Another, quite a numerous group with hearing disabilities are those who lost their hearing in the post-lingual age (after they learned to speak their mother tongue) and who do not use a sign language and do not have contact with the deaf community. Many of them are elderly people. That is the group to whom the subtitles in the OPEArt guide are addressed.

OPENArt in education

The development of the OPENArt application stemmed from the idea to give access to education on modern art to people with sight and hearing disorders and to improve the quality of this education by making art presentations more attractive for non-handicapped people from Poland and abroad. The solution not only enables people with disabilities to enjoy so far inaccessible world of culture but also gives them a chance to receive some education in this area. Non-handicapped people, in turn, can learn and better understand art, including modern art, as the forms of presentations employed in OPENArt are adapted to the needs of today's receivers. The understanding of modern art is based on proper education and more frequent opportunities to experience art in person. The multimedia guide can be helpful to all who are afraid that experiencing modern art is a too ambitious challenge. It can also encourage them to have contacts with art more often. It is worth mentioning that the topic of the presented contents is practically unlimited and not restricted to art. The application can be used to present any contents.

The solution is able to counteract the exclusion of handicapped people, as well as those economically or otherwise disadvantaged, and to activate them to participate in cultural life and art. People with sight and hearing disabilities or physically disabled are often excluded from cultural life, so they are excluded from a very important aspect of social life. People with sensory disabilities have limited access to culture either due to physical or economic barriers. Poor access to culture causes social exclusion and lowers the opportunities of sustainable development and education.

The research conducted within the project showed that consuming modern art is a social practice and visiting modern art galleries or museums is an activity undertaken most frequently with friends. One of the reasons of such preferences is the opportunity to share one's interpretations or associations with other people. Thus, the universal character of the OPENArt application allows to integrate different social groups. The blind people who visit museums together with the sighted receive the same information about the exhibits which fosters free exchange of art-related opinions and experiences among all viewers. This way the multimedia guide can be used to educate the blind, partially sighted, deaf, and hard of hearing. It can be helpful in working with non-handicapped children during arts classes or foreign language classes. It supports activities to foster sustainable education in special schools, inclusive-education schools and standard schools.

The solution is based on two elements: functionality and knowledge base. Irrespective of the knowledge base volume, the application will always maintain full functionality. The contents of the knowledge base can be freely expanded and adapted to the real needs of museums. Thanks to that, the educational offer provided by the application can be directed to all receivers, at any point of their lives and on any education level. In order to adapt the contents to the perception abilities of the users, an extra element was developed in the application, i.e., guidelines for those

who prepare descriptions of the presented exhibits. In addition, the multimedia guide provides access to modern art exhibits to non-Polish speakers by providing English versions (both audio and subtitles). There are no problems with multiple languages of the users as they get information in the languages in which their smartphones work.

Due to the solution flexibility and easy management of information assets, the potential market for the solution is very big. In practice, the widest use is achieved by giving access to the mobile application of the guide on popular platforms like Android and iOS. This way every interested person can download the guide application and install it on his/her mobile tool from GooglePlay or AppStore application markets.

The OPENArt application enables to improve the quality of education and the quality of life of all social groups. In addition, it facilitates art-related education of children and young adults by using state-of-the-art technologies which are attractive to young users. The solution makes it possible to experience modern art by those who will go to the museum and those who, due to their place of living or other factors, cannot do it by themselves. What is more, the attractive and modern form of the multimedia guide encourages a wide group of potential users, particularly the young, to go to museums. The development of modern technologies, particularly growing popularity and common use of smartphones, results in a situation when mobile tools successfully replace audio and video players, books, or photo albums. Multi-functionality, availability and integration possibilities of smartphones make them excellent tools for presenting information about museum exhibits. The choice of mobile tools as the main data carriers for the guide contents resulted from the desire to develop a compact, multimedia and extensive set of information that would be available to a large group of users. Applying these tools, the users can raise their technological abilities and skills in using modern ICT technologies and update their knowledge in selected domains. Eventually, a raised education level of the society impacts the development of the knowledge society.

OPENArt social and economic aspects

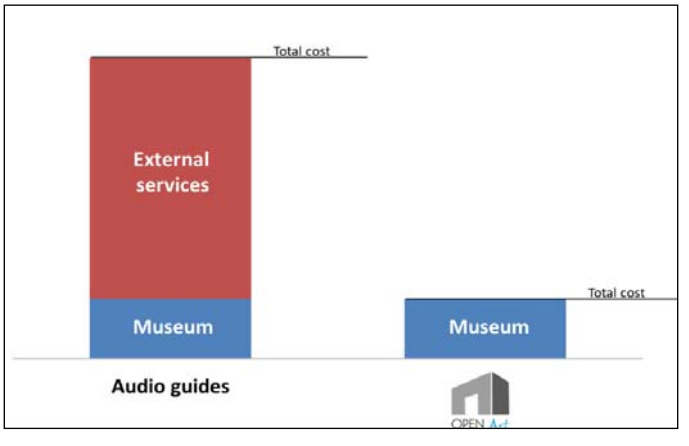
The development of the OPENArt guide is an initiative which connects modern art education with practical activities fostering the access to a widely understood world of culture and art for people who have not had such opportunities so far. Additionally, it provides a comfortable and unified space to learn about art and experience it irrespective of one's location, physical abilities, age and sex.

For the majority of handicapped people an active cultural life is simply inaccessible due to the lack of adequate facilities that should be offered by cultural institutions. Therefore, most often, these people stay at home. It is important to note, however, that they use modern IT tools and services more and more frequently. This fact was taken into account while developing the multimedia guide. The ability to use mobile tools by the disabled, along with the benefits of the OPENArt application, opens the doors to cultural and art education with no extra effort, in a comfortable and stress-free manner. This is a positive factor promoting the equal opportunities policy and social cohesion by raising people's awareness about the benefits of limiting social exclusion and overcoming barriers which discriminate certain social groups. Irrespective of the above, the use of the application by museums may have positive impact on better recognition of Polish (modern) art among local and overseas receivers.

Apart from obviously positive social significance of the developed solution, there are economic benefits too. They can be enjoyed both by visitors and museums. No doubt, the application can replace traditional audio guides and easily modify the contents offered to the visitors, with the use of any number of foreign languages. A big advantage of the solution is that it can be used in open public spaces, such as urban space or mixed space (both inside and outside the buildings). The support for the deaf is an important asset. It is possible to provide translation into a sign language by using either a video with a translator or an avatar.

In the case of traditional audio guides, the total cost of the solution consists of two elements (Figure 2.):

Figure 2. Differences in costs of implementation and maintenance of traditional audio guides and OPENArt in a museum



Source: authors' own work.

the cost of work provided by the museum to prepare the contents of the guides (exhibits descriptions) and the cost of external services, i.e. recording of the descriptions. In the case of OPENArt, practically the total cost is on the side of the museum as the application is a framework (there can be any content placed and there is one application for many museums available) and most functionalities were transferred to a smartphone. As regards the maintenance of the system, the museum is only responsible for the update of the content placed in the application. The adaptation of the application to the new system requirements is the responsibility of the application provider.

OPENArt innovative features

At present there are no solutions similar to OPENArt, neither in Poland nor abroad, that would be addressed to such a wide group of users. Most today's museums do not have guides or other materials adapted to the needs of the blind and the deaf. Some cultural institutions have prepared special descriptions of their exhibits for people with sight disabilities (in the form of audio description). However, these descriptions are hardly useful due to their considerable length and too much specificity. In the OPENArt project, for the first time in Poland, the universal design theory was used to describe museum objects. The needs of particular target groups of users were analyzed and on this basis the principles were defined how to apply universal design to works of art descriptions (Story, 2016). Then, a universal description method was applied to satisfy all potential users. The multimedia contents of the guide were adapted to the needs of users with sight (audio version) and hearing (subtitles, sign language) disabilities, as well as the needs of foreigners (English audio version and subtitles) (Szarkowska et al., 2015).

The project team have also made research on locating and identifying objects in closed spaces with the use of the so-called real-time locating systems (RTLS) (Bahl and Padmanabhan, 2000, pp. 775–784; Socha et al., 2015; Górka et al., 2010; Garcia-Valverde, 2013, pp. 702–718; Krumm and Horvitz, 2004, pp. 4–13). The majority of commonly used systems of that type are based on wireless measurement of distance. Here one can distinguish radio-, optical- (infrared radiation) and acoustic (ultrasounds) methods. The selection of an adequate method depends, first of all, on the conditions of the monitored area and on the demanded measurement accuracy. Acoustic and optical systems do better in smaller spaces, as they allow to obtain better accuracy. Radio systems work better in big spaces; however, their measurement accuracy is no better than 1m. In closed spaces it is necessary to take into account the reflection and absorption phenomena. The research within the project comprised methods based on optical, magnetic and radio techniques. Two types of methods were analyzed. Firstly, broadband methods with the ToA (Time of arrival) or TDoA (Time Difference of Arrival) measurement techniques based on, respectively, the measurement of propagation time and the measurement of difference in propagation times and, secondly, Wi-Fi-based systems (standard 802.11x). Additionally, the analysis comprised solutions based on tools working in UWB (ultra-wideband), which ensure the highest precision in closed spaces and a big transmission bandwidth – now this technology is recognized as cutting edge and still remains in the realm of advanced development works.

The use of RTLS systems allowed automatic identification of museum exhibits and the user's location in the museum space (Socha et al., 2015). Thanks to that, the disabled, particularly those with sight dysfunctions, can visit the museum by themselves and can get information about the exhibits automatically, with no special effort on the user's side.

For testing reasons, 60 multimedia descriptions of selected exhibits (20 in each involved museum) were prepared. The contents and form of the descriptions were tested by potential users in terms of usefulness and availability. The research took place at the Gallery of Polish Art of the Twentieth Century at the National Museum in Krakow. The aim of the study was to assess the operation of the OpenArt application in the natural conditions of visiting the museum. 14 people were invited to visit the selected gallery using a multimedia guide, including:

- 6 people with visual disabilities (blind and partially blind);
- 2 people with hearing impairment;
- 6 people without disabilities.

The following were examined:

- ease of the users' interaction with the multimedia guide application;
- user interface – appearance, ease of use, intuitiveness;
- speed of application operation;
- attractiveness of the form of transferring information about the exhibits and their adaptation to the needs of people with sight or hearing problems;
- accuracy and precision of mechanisms for locating objects;
- attractivity of the description;
- duration of the description.

The verification was carried out using the methods of observation, interview and questionnaire. The OpenArt application was approved by the respondents. In spontaneous assessments, they pointed to the deepened experience of communing with art and easier understanding of the artists' intentions. Based on the statements of the respondents, it can be concluded that the proposed form of the exhibits' description meets the needs of a wide spectrum of recipients – it meets the expectations of both blind and deaf people as well as those without dysfunctions.

The result of the verification tests will be used to make further improvements of the multimedia guide. Detailed results of the research will be the subject of another publication.

Conclusions

The OPENArt multimedia guide is not limited to a certain area and can be used locally, while visiting museums, as well as on the regional, national and international level thanks to the use of free application which enables free access to the museum exhibits irrespective of the user's current location or place of living. The application is available in museums and on the Internet. Thanks to equal and barriers-free access to culture, the application makes it possible for every person to experience modern art, with no division into different groups of users. The open formula of the guide makes it a usable tool for art education that can be applied in museums and galleries all over the world.

The application developed within the OPENArt project solves a socially sensitive problem of cultural exclusion and responds to a huge social demand of art availability to people with sight and hearing dysfunctions, for whom experiencing works of art in person has been practically impossible so far. Now they will be able to enjoy the museum or gallery exhibition by themselves thanks to the embedded module for localizing exhibits in space. Galleries and museums will be able to employ inclusion policies that would invite different social groups, including those with sight and hearing disorders, into the world of art, this way stimulating, through education, the growth of social development and social capital.

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Abstract

Many museums in Poland and all over the world make use of mobile technologies. Unfortunately, neither Polish nor overseas applications offer universal solutions for users with different levels of knowledge and different disabilities. People with sight and hearing disabilities, as well as those physically handicapped, are very often culturally excluded, which means they are excluded from an important aspect of social life. As part of the project 'OPENArt – Contemporary Art for All,' a multimedia guide was developed in the form of an application for portable devices. It was designed in accordance with the participatory design methodology and principles of universal design. It facilitates access to works of art exposed to people with hearing and visual impairments. The application can be used to educate the blind, visually impaired, the deaf and hard of hearing, as well as people working with non-disabled children in arts and language classes. In the paper the innovative features of the guide were presented, and its educational values were characterized.

Keywords: universal design; audio description; modern art; museum; mobile applications

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The University of the Third Age in Poland. A Democratic and Holistic Approach to the Education of the Elderly

Aleksander Kobylarek[*]

The literature on the subject provides a relatively large amount of work describing various models of the University of the Third Age (U3A), such as French, British or Chinese. Numerous accounts of the functioning of educational institutes for seniors in Poland have also appeared but the attempts to distinguish and classify the characteristics which define the originality of the Polish model are scarce and insufficient (Halicki, 2000). A more extensive examination of global achievements in the education of seniors, as well as a more in-depth analysis of the Polish solution, leads to the conviction that it is worth pursuing a definition of the Polish model of the U3A.

In this article the author makes an attempt to define and describe the distinctive features of those education institutes for seniors which call themselves the Universities of Third Age. Starting with an account of the inspiration for the concept of the Polish U3A and its subsequent development, the author goes on to analyze such features as participation, syllabus, management and sources of funding.

The author's conclusions are based on almost twenty years' experience of the cooperation with Polish U3As operating within the Lower Silesian Federation of U3As, as well as with policy makers both from the local government and EU institutions regarding adult education and activation of the elderly. However, the fundamental knowledge about the development of the institutions of that type comes first and foremost from the author's experience on the position of the Director of U3A at the University of Wroclaw.

Introduction

Academics involved in the question of education for seniors generally connect the creation and development of U3As with the rise in an aging population (Yenerall, 2003). This approach appears to be unsubstantiated because in the 1960s we were dealing with only the beginning of demographic change, and in 1975 when the first U3A in Poland was established there was even a significant rise in the birth rate (Kiełkowska, 2018, p. 71). Observing the development of U3As today, one could come to the conclusion that their inauguration and rise result from individual needs, i.e., defined by the seniors' leaders and self-governments of the U3As rather than social needs connected with the policy and interests of institutions. If the state were interested in maintaining the U3As, it would allocate the appropriate funding whereas the rise and development of U3As most often results from the engagement of leaders and groups representing local community. Such were the origins of the U3A, and to a large extent that is their strength today. This leads to the theory that the driving force of the U3A arises from the needs of elderly students (the British model) or the needs of various educational providers (the French model).

However, in these cases the role of leaders is just as relevant as the needs of the students and the institution. For example, the charismatic directors of the first Polish U3As guaranteed stability, strength, and a precisely defined mission in organizing those institutions. In the case of Wroclaw (to which the author will constantly refer in this article), this was evident in the activity of Alina Woźnicka, one of the first directors of the U3A. Thanks to her, the institution was able to survive not only the period of Martial Law but also organizational changes and financial difficulties. In comparison, those U3As which were formed in Wroclaw after 2006 faced a constant battle with various kinds of staffing and restructuring problems, and frequent changes in management. The U3A at the University of Wroclaw itself had to tackle a similar problem after 2016, when a director without appropriate experience was appointed, and who eventually resigned after only one year in the position. Other universities in Wroclaw (e.g., U3A at the Economic University and the Lower Silesian University) faced similar problems from the very beginning. Unable to find the proper leaders and create effective self-governments struggled with establishing the structure and lectures.

The genesis of the Polish U3A concept

Since the very beginning the idea of the Polish U3A has been motivated by the furtherance of self-help.

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This indicates a certain duality from the beginning. On the one hand, the need and desire for education came from the seniors themselves, and on the other hand, the same community had to find leaders who would have taken upon themselves the responsibility of first implementing and then organizing the whole enterprise. That was a very difficult task because, apart from conciliatory skills, the leaders had to have many other character features, such as authority and leadership, ability to combine theory with practice, whilst having bold concepts and visions of the possibilities of the local community.

In Poland, the initiators of change were first and foremost pedagogues and representatives of the medical profession. Therefore, the first Polish U3As were intimately connected with medical and educational professional groups:

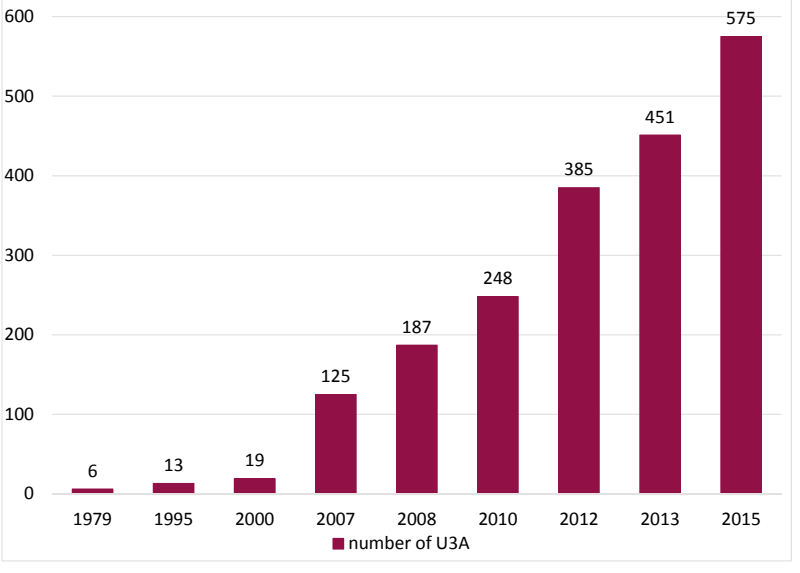
- in 1975 Halina Szwarc (Professor of Medicine) founded a U3A at the Medical Centre for Postgraduate Education in Warsaw.
- in 1976 Czesław Kempisty (Doctor of Medicine) organized the Third Age Studium at the Trade Union Workers' University in Wroclaw. After a few years the Studium was renamed the University of the Third Age (Bilewicz, 2001).

Both Halina Szwarc and Czesław Kempisty, with first-hand experience of the war and occupation, were particularly sensitive to the needs of elderly people damaged by history. Szwarc had been imprisoned and tortured by the Gestapo, and Kempisty had been a prisoner in Auschwitz. Whilst preparing a book to celebrate the institute's fortieth anniversary Dr. Anna Sokołowska conducted in 2015–2016 conversations with the oldest students at the Wroclaw U3A and studied the archive material. The analysis of what she had collected led her to conclude that the fundamental aim of founding the Wroclaw U3A was to take care of the physical and mental health of the generation who had survived the war. Unfortunately, the book was never published due to a change in the management of U3A.

It should be remembered that when these first U3As were established, Poland was still behind the Iron Curtain, and international cooperation was strictly limited. It could only happen upon the consent of the Communist Party and was strictly controlled, as was any information emanating from the West. However, it should also be appreciated that, despite these limitations on the exchange of ideas, one of the first U3As in the world was established in Poland, years before the British, Australian, Chinese or American models of education for seniors were initiated. However, it should also be admitted that the activities of the British Open University and American Elderhostel were older and inspirational. On the other hand, this lengthy isolation probably caused that the education of the elderly in Poland has its own character, without copying foreign models, and at the same time addressing local conditions and possibilities. That influenced the later development of the spoken institutions as well as their flexibility and disposition to experiment.

Analysis of the implemented regulations allows to state that from the beginning the U3As were inclusive because the only requirements for participation were age, a clear expression of willingness to learn, and a commitment to take an active part (Bilewicz, 2007). This mission of activeness, related to M. Grundtvig's concept of the school as a place for all who wish to improve themselves (Pierścieniak, 2012), is still cultivated today at the majority of Polish U3As. In recent years, inspired by the free market, the concept of the

Figure 1. The number of U3As in Poland in the years 1975–2015



Source: author's own work, based on Konieczna-Woźniak 2001, the National Statistical Office 2016 and 2018, and the archives of the U3A at the University of Wroclaw.

U3A as a profitable organization with high education standards, with a complete system of certification and accreditation, has also come into being. This trend has been introduced on a large scale by the Federation of U3As.

The growth rate of U3A in Poland

In the development of the U3A different periods may be identified. These periods relate to the establishment of new U3As, stimulated by political and demographic changes.

The graph in Figure 1 reveals two important trends. Up to the collapse of communism in 1989, there had been only a few U3As in Poland, and they had been necessarily connected with higher education institutes or medical or social care institutions. Thus, it is possible to say that they followed the French model. However, such a conclusion would be erroneous if taking into account the essence of their activities, because from the start they had been created with significant input from adult students themselves, thus resembling the structure of U3As in Holland (Hug, 2010).

A significant increase in the number of U3As occurred after the collapse of communism in 1989, with the number of senior students doubling every few years, so that by 2015 there had been more than 500 independent educational institutes catering for more than 150,000 elderly students (Piłat, 2014). The connection between the rising number of U3As and political change is quite visible. Thanks to liberation from communism, Poles could take the initiative, and by working together create various non-governmental organizations, including U3As.

The breakthrough year came in 2007 when more U3As were established than during the whole period of the preceding 25 years (*Zoom na uniwersytety trzeciego wieku*, 2012, p. 16). Analysts indicate that this was connected with:

- significant demographic change (between the years 2000 and 2010 the number of retired people increased by 1.8 million);
- opportunities for financial support (for example, the Polish-American Freedom Foundation announced a competition for grants for U3As).

The lifestyle also changed, and there was a significant rise in the number of non-governmental organizations which had the opportunity to seek funds, including for the education of seniors. The rising ambitions of local communities also remained not without significance. They perceived the prospering U3A as an elite form of education with the possibility of adapting it for their own needs with a relatively small amount of effort.

After the year 2000 many well-educated people, who had graduated in the 1960s during the first wave of mass university education in Poland, became eligible for retirement. That group of people was seeking new possibilities for self-education and development as well as a positive way of spending their free time. As a result, they either joined existing U3As or created the new ones. Despite the fact, that the group was relatively small (only a tiny percentage of the population had a degree in the 1960s), after the year 2000, they gradually began to dominate, at least in some U3As. Thus, at the U3A in Wroclaw, since the year 2000, the number of elderly students with higher education started to systematically rise to account for more than 50% of the total in 2005 (Bilewicz, 2007).

Participants

The average student of the U3A in Poland is a woman aged 65–70, with secondary or higher education, living in a large or medium-sized city (*Zoom na uniwersytety trzeciego wieku*, 2012). In this respect, the profile of Polish U3As does not differ much from other institutions of the same type in Europe and other parts of the world (Patterson et al., 2016; Wiliamson, 2000). In all the U3As known to the author, the percentage rate of men does not exceed 10%, although research shows that in Poland the national average is closer to 15% (*Zoom na uniwersytety trzeciego wieku*, 2012).

The feminization of the U3A results from:

- the higher death rate of men; The difference can be spotted as early as at the age of 35 and becomes even greater among those who have just retired;
- the lower retirement age for women (5 years earlier);
- different ways of spending free time by men and women;
- more interest in education expressed by women; therefore, they treat the U3A as an opportunity for self-realization and personal development.

The majority of Polish U3As accept retired people over the age of 60, but because of ill-health many of them leave after reaching 70. However, the institutes are well-prepared to cater to those of the fourth age – who are 80 and older (Formosa, 2014; Klimczuk, 2013). Some authors also point to other limitations, such as the lack of educational opportunities for those who are passive and dependent and are marginalized because of poor health or illness (Szarota, 2014). Thus, the more emphasis on elitism and 'the market,' the more the activeness mission is threatened (Marcinkiewicz, 2011).

The first U3As in Poland were established in the largest cities, and it was not until 2000 that initiatives of education for seniors began to appear in smaller towns as well. At the same time, the number of U3As in the first was systematically growing. That may seem obvious because the big cities have more resources as for students, staff, and study centers, which are essential for the proper functioning of a U3A. Thus, in those cities, there is currently a fair number of U3As. For historical reasons, the highest number of them is in Warsaw and Wroclaw, where the whole movement started.

Because of the aforementioned dominating location of U3As in the cities which already are academic centers, and since their students are well-educated

people, it allows us to conclude that it is an elite form of education. A more in-depth analysis, however, shows that this conclusion is somewhat unfounded. It is possible to define U3As in Poland as elitist only in the sense that barely 3% of retired people benefit from them, according to the statistical data from 2015. There are practically no formal barriers in applying to study at Polish U3As. They accept almost everyone who is over 50 years of age and who has paid a relatively small enrollment fee (generally from 20 to 100 PLN which is the equivalent of 5 to 25 Euro per year). Of course, there are a few exceptions to these rules. Overrepresentation of students with secondary or higher education (more than 40% in both cases) results from the fact that well-educated people already have a pro-education approach developed at previous stages of their learning, which is the basis of andragogy. Apart from this, only a small number of U3As require a certain level of education from candidates as a precondition for entry.

In the vast majority of cases, it is the older students themselves who create the strength and position of their U3A. The syllabus and the extent to which the institution is able to satisfy the educational needs of its members depend on the individuals who later become the leaders. In research concerning the U3As, one can find reference to a 'golden proportion' of 20:80, which in this context means 20% actively engaged and 80% passive participants (Zoom na uniwersytety trzeciego wieku, 2012). Drawing on the experience of the Lower Silesian Federation of U3As and the observation from the U3A in Wroclaw, this proportion seems to be derived from the statements of the participants themselves rather than from the objective and defined factors. According to the data collected by the author, in those U3As which are based on the Polish model and the author has had contact with, the number of individuals engaged in creating an active educational community for seniors does not exceed 10% (Kobylarek, 2010).

When discussing the role of volunteers in the development of the Polish U3A, it bears noting that much of their success is based on an intergenerational factor. Many of the volunteers engaged in providing or organizing lectures are undergraduates, Ph.D. students and junior lecturers, who share their scientific interests with the older generation. Their presence is perceived as an additional factor in motivating seniors to take part in activities because they can become familiar with the language, customs and values of the younger generation in a pleasant atmosphere. This model of intergenerational cooperation was particularly promoted in the Wroclaw area from 2006 to 2016 and became the pattern for subsequent U3As established in the region.

Syllabus

The syllabus of Polish U3As depends on the needs of the students themselves and the availability of lecturers. The oldest and most active U3As even have their own student councils to ensure an appropriate balance between various types of lectures. In larger academic centers, the U3As are more often affiliated with a higher education institution or operate in close connection with universities, renowned experts and specialists in a particular field, or the retired professors. In smaller towns, the U3As find their staff among intellectuals or other prominent individuals from the local community – politicians, theologians, doctors, teachers, lawyers, journalists, and artists. Almost all U3As also encourage volunteers from amongst their own members, who create their individual and unique program, and then give lectures for the others based on it.

Such a diversity of lecturers is bound to influence the syllabus. The basic propositions are typically academic activities – lectures, discussion groups, and teaching foreign languages. The second type of activity is connected with physical culture. These activities most often include general exercises, such as gymnastics, as well as specialist exercises for people with blood circulation or mobility problems. The third type comprises workshops in such subjects as computer skills, literature, journalism, painting, theatre, and crafts. The final group consists of intergenerational activities, i.e., sections aimed at organizational issues, mutual cooperation, voluntary work, an ethics committee, student council, sports competitions, and excursions.

Activities are individual by nature and are adapted to the specific audience of students with varying degrees of education, preparedness, and ability. Thus, the lectures, which generally have the character of 'popular science,' should be communicated in a way which is easily understood, and sports activities and excursions must not be too physically challenging.

The whole syllabus may cover two types of activities – academic, and artistic and integrational. Some U3As limit themselves to academic activities, but the vast majority attempts to meet the needs expressed by their students. Therefore, they organize the appropriate events, depending on whether they can find lecturers and instructors within the local community. Thus, in many U3As artistic and intergenerational activities sometimes outnumber academic activities. In an attempt to avoid such a situation, there is a scientific council composed of local education experts.

On the other hand, it is worth to stress a relatively strong need for expression, fulfillment, and integration among seniors, and the role of the U3A, as every educational institution, is to satisfy such need somehow. In U3As where the possibility of meeting such needs is limited, the seniors themselves find their ways, for example, by organizing additional meetings in cafes, clubs, and arts centers, or transferring a part of the activities to their homes or gardens, where the learning environment is less formal.

Some U3As organize special intergenerational activities, some engage undergraduates and Ph.D. students in various subjects, who give lectures as part of their practical work. Joint lessons with school children

also constitute an example of such activities. Namely, lessons on preparation for the old age were conducted in one of the secondary schools in Wroclaw.

Apart from activities conducted by selected and reputable specialists or by volunteers, it is worth to mention the short-term activities undertaken within the framework of local, national or (less often) international projects. Such actions sometimes become a part of the syllabus and are valuable experiments which broaden the opportunities of the institute (Jakubowska, 2012).

Government

Generally, Polish U3As are governed by strong, often charismatic leaders, strongly supported by a student council. Here, taking advantage of the opportunities of the university and non-governmental organization is perceived by them as the best chance ever.

Those U3As operating within an educational institution generally have a director appointed by the university, who works in cooperation with the U3A's education council and student council or with the leaders of various sections and groups. Newer U3As, established after 1989, having a non-governmental legal status or created by some other non-governmental organizations are governed by a chairman and council, without any interference from the university. However, in contrast to British U3As, the Polish U3As generally seek the support or patronage of some higher education institutions to have access to the suitable staff.

The remarks above show that there are many types of U3A in Poland, but in fact, they converge, both in form and content. Those connected with an educational institution become open and democratic, whilst those of a non-governmental nature seek the patronage of a university. One way or another, regardless of the organizational form, the U3A assumes dual governance or at least cooperation between various authorities. We can also look at this in another way. The interests of both higher education institutes and senior students are suitably and proportionally represented. In higher education institutes, the rector appoints one of their representatives as a director whereas in the non-governmental model the directors and council are elected. Thus, bottom-up and top-down decision-making comes together in an ideal combination.

The governance system described above is connected with increased opportunities of cooperation with other organizations. In this regard, Polish U3As display a high degree of operational freedom, flexibility and a tendency to move into the space occupied by other organizations. This is the result of the limited local resources which are available to them, as well as constant under-funding. Indeed, since the very beginning, Polish U3As have had to struggle with various shortages, so cooperation with other organizations became essential in order to first survive and then develop.

Currently, the majority of U3As are either non-governmental organizations or governed by non-governmental organizations. The reason for that is twofold: the fall of communism and centralized state control, followed by the democratization of society. Both created the conditions for relatively easy setting up and managing the non-governmental organizations.

During the 1990s a new Higher Education Act in Poland has led to a boom in education and opened up the opportunity of creating private universities and other institutions of higher education. Thanks to that, the number of students quadrupled between 1990 and 2000. However, that increase refers only to young university students and not U3As because the universities were not interested in recruiting elderly students.

Both, already existing and newly created higher education institutions rarely perceived the possibility of fulfilling the so-called 'third mission' through creating U3As, and they were not prepared to discuss the options of widening their activities to include seniors (Kobylarek, 2002).

Finance

Since the very beginning, a lack of stable funding had been one of the most severe problems facing the U3As, and this, in turn, had led to a strong dependency on volunteer work and self-organization. Lack of funds had forced the senior students to conduct lectures themselves or organize meetings, and sometimes also to find material for the lectures.

During the first period of development of U3As as part of the university structure, they could count on practical support in the form of lecture halls and volunteer lecturers. Membership fees had been collected to cover organizational expenses. Practically, that had been the limit of financing opportunities for the U3As. The higher education institutes themselves had not seen the possibility, or even the necessity of allocating their own funds to the needs of seniors. The situation had not changed significantly until after 2000 when special financing programs came into being and U3As could take part in competitions for grants allocated to non-governmental organizations. Of particular importance were such programs as:

- the Polish-American Freedom Foundation grants, since 2005;
- the ASOS government program, since 2012;
- EU projects within the Socrates, Grundtvig and Erasmus+ programs.

At present, there are three independent sources of funding for U3As in Poland. In order of importance, by far the first is membership subscription. The second most important is the subsidy, most often from local government as a means of stimulating the local community. The third source of funding is available through various education programs. Unfortunately, the disadvantage of these programs is that they are transitory – there is no guarantee that one project will lead to another. Thus, money obtained through such

grants cannot be treated as supporting the permanent day-to-day activities of the institution but rather as a one-off contribution, which obviously carries a certain amount of risk.

There are two types of non-financial support for Polish U3As. One of them is voluntary work. This is, of course, not the same as all-important financial support, and its contribution is difficult to evaluate. Nevertheless, there is no doubt that it is a factor which outweighs the acquisition of monetary funding. The strength of Polish U3As lies in the immeasurable input of organizers, lecturers and the seniors themselves, who account for the social capital of the institution. The second type of non-financial support consists of material contributions, such as gifts of books, musical instruments, among the others, donated by institutions, firms and private individuals for the use of the U3A.

Conclusions

The socio-political situation in Poland had a specific influence on the development of U3As, which was closely connected with the opportunities that the state could provide. Under communism, such opportunities were limited, and the U3A could only blossom after the attainment of political independence and improvement in the national economy. Polish U3As developed on many different tracks. One could say, that it is essentially a kind of an on-going experiment, attempting to cope with various challenges, and adapting to the needs of the surrounding environment on both a micro and a macro scale. It seems that this is the best possible approach in testing various education solutions, as shown by the flexibility of the institution and the ingenuity of its understanding.

Currently, it is not possible to fit Polish solutions into the British, French or any other model suggested by the literature. One can only look for similarities and characteristics common with other world-wide solutions. As a specialist institution, adapted to the needs of a precisely defined senior student, several features make the Polish model of the U3A stand out – democracy, holistic education, flexibility, and intergenerational cooperation.

One may also predict that U3A is the type of institution which will sooner or later succumb to converge in various parts of the world, provided people willing to adopt and test different solutions are found. Presented observation confirms that the ability of the U3A to adopt one of these models depends on the organization of education itself.

Thanks to the cooperation with dynamic teams of dedicated people, the U3A at the University of Wroclaw successfully transferred in the years 2009 through 2016 the best solutions to organizations in Ukraine and Belarus. The most important of those solutions are – the needs analysis of elderly students, mechanisms for stimulating and maintaining active local leaders, diverse sources of funding, participation in international cooperation, working conferences, and study trips. The fact that these few dozen U3As, established within the framework of various international projects, chose to develop according to the Polish model rather than the British or French ones, although there was no pressure on them to do so, gives the evidence of the strength of the described model. Thus, it would appear that these solutions are even more worthy of dissemination. Therefore, it is even more painful that U3A at the University of Wroclaw which served as the example in these considerations became the victim because of the radical change in its management in 2016. From that time the institution cut off all international contacts and practically ceased to undertake any initiative in the field of international cooperation. It even stopped to have any primacy in the local environment, being reduced to just one of many similar institutions catering only for its own students. Though, it is yet more proof confirming that these are above all charismatic leaders who have shaped the vision and mission of the Polish U3A.

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Abstract

The article describes the history of a specific type of the University of the Third Age which was developed in Poland and spread out to other countries in the region. The author describes the genesis of this type of education as well as the criteria which governed changes in educational institutes for seniors. Above all, the article discusses the innovative solutions, education practices, and trends which initiated the post-2000 boom in adult education in Poland. The author summarizes and structures the experience gained while working as the Director of the University of the Third Age at the University of Wroclaw in years 2006–2016, with particular reference to the national and international perspective. Remarks of the reflexive practitioner are compared and contrasted with ultra-local trends and take the form of meta-analysis. The results lead to one fundamental conclusion – in Poland a specific model for the education of seniors was formed. We may describe it as bottom-up, democratic, holistic and flexible.

Keywords: U3A; adult education; holistic education; university mission; lifelong learning

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The Image of a University of Economics from the Perspective of University Candidates – Based on the SGH Warsaw School of Economics

Joanna Tabor-Błażewicz[*]

The article addresses the concept of university image and its impact on student satisfaction and loyalty. It discusses the factors connected with the need to build and sustain an appropriate image of a university and offers an original definition of a 'university of choice.' It also presents survey results (over 400 respondents) regarding the image of a Polish university of economics – SGH Warsaw School of Economics – from the perspective of university candidates.

Introduction

University image is every recipient's own, individual notion of a university arising from the information they have learnt about it, whether intentionally or accidentally (Stachura, 2006, p. 362). The notion (opinion) of the environment about a university develops through the confrontation of the messages sent by the university with information from other sources, for instance, one's own experience, other people, competitors or mass media (Krzyżak, 2009, p. 120). Therefore, university image is how the university is seen by its environment, especially in the education market, and more specifically it is the aggregate of subjective notions and of knowledge about the reality that emerged as an outcome of the perceived impact of the communications (Białoń, 2012, p. 368). To sum up, university image is the aggregate of the notions and knowledge about the university that have developed based on the messages communicated by the university to its environment.

The image may consist of a number of elements, for example, the quality of education, the place where the university is based, the academic ethos, the ranking against competition, the economic conditions of learning, the communication with the environment, student life (Stachura, 2006, pp. 362-363). It is worth to mention, that American studies also include athletics/physical education (Arpan, 2003, p. 104), usually left out in European studies. Factors such as reputation or tradition of a university are of importance – they were first listed in the 2005 study involving 630 first-year students from universities of economics in Poznań, Kraków, Katowice and Wrocław and from the SGH Warsaw School of Economics (Oczachowska, p. 170). Other significant image determinants are: ranking against the competition, education quality and level, competencies of the faculty and opinions about the university – as shown in another study, involving 157 students of universities from the Dolnośląskie Province (Ryńca & Miśko, 2016, p. 229).

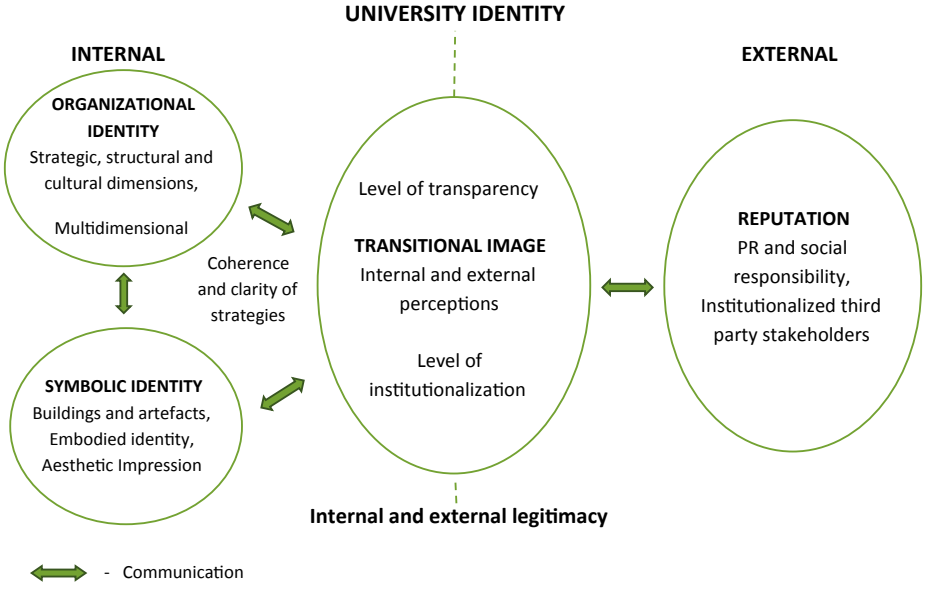
The image is not given once and for all, but it changes depending on various factors and developments taking place both within the university and in its surroundings, among competitors.

University image functions in combination with the identity and reputation of the university, and the correlations between them as shown in the multi-dimensional model developed by L. Steiner, A.C. Sundström and K. Sammalisto (Figure 1). The internal area comprises organizational identity (strategic, structural and cultural dimensions) and symbolic identity, expressed for instance through buildings, artefacts and aesthetic impressions. The external area is identified with reputation of the university, which consists of public relations and corporate social responsibility activities.

Due to its limited volume, this paper focuses exclusively on university image in the eyes of university candidates, even though they are not the only recipients of university image. That group includes also: students of a particular university, its graduates, employees, families of those groups, competing and partner universities, businesses working with the university – who may potentially find employees among the students or whose employees have graduated from the university. Moreover, entities that finance the university's teaching and research activities, associations working with the university, the media, and the local community belong to that group as well. The majority of the above groups may include both Polish and foreign stakeholders. It should be emphasized that the image of a particular university may vary considerably depending on the study group; besides, representatives of various groups may base

[*] SGH Warsaw School of Economics

Figure 1. Multi-dimensional model of university identity, image and reputation



Source: Steiner, L., Sundström, A.C., Sammalisto K. (2013). An analytical model for university identity and reputation strategy work, *Higher Education*, *65*(4), p. 409.

their assessment of the image on different criteria. In studies carried out at universities in the USA, students (the first study group) listed three factors contributing to the image: academic factors, athletic factors (which included a perception of the university as an excellent place to spend your time) and the extent of media coverage. Respondents belonging to the second study group (adults, non-students) also mentioned the opinions of their family and friends, the education level and the extent of individual fanship (Arpan, 2003, p. 110).

Reasons for studying university image

The introduction of the Bologna process and the related harmonization of academic grades across the European Union already contributes, and may contribute even more in the future, to increased mobility and further reinforcement of the competition between academic centers, which may eventually lead to the demise of the weakest facilities (Alves, 2010, p. 73). For example, in 2015, 1.6 million students in Europe chose university studies in a country other than the one where they graduated from high school, with 46% commencing undergraduate studies and 41% enrolling on graduate programs. Almost one third of them chose the United Kingdom (27%), followed by France (15%) and Germany (14%) (Eurostat, 2017). The indicated Eurostat data published in 2017 show that the highest share of foreign students in the total number of students was recorded in Luxembourg (46%), the United Kingdom (18.5%) and Cyprus (17.5%). The said ratio was the lowest in Slovenia (2.7%), Poland (2.6%) and Croatia (0.5%).

One way for a university to increase its competitive edge on the market of higher-education schools is to build its lasting and appealing image in the eyes of candidates – to distinguish itself from other universities and make the candidates want to get in. However, it is also important not to misrepresent the actual qualities of the university since candidates who later become students will verify the marketing slogans that attracted them in the first place.

Those who stress the importance of building an appealing image of a university often mention how difficult it is to promote an education service – due to its intangible and specific nature. This intangibility causes a number of difficulties, for instance, when it comes to presenting the offer and defining the candidates' expectations, and it increases the decision-related risks, while the specificity lies in the fact that the service is used (for some people) only once in a lifetime. Higher education choices are accompanied by mental pressure, the service is provided over a long period and the final evaluation of the decision is highly deferred (Krzyżak, 2009, p. 124). Actually, similar aspects pertain not only to universities but also to schools at a lower level of education (Pietrulewicz, 2014, p. 23).

Impact of university image on student satisfaction and loyalty

The effects of university image go beyond attracting candidates. Studies on the correlation between university image and satisfaction of the students of a particular higher-education institution were carried out, among others, in Spain (the group of respondents consisted of 6675 students from Spanish universities). The study measured the cognitive image, the affective image, the overall image and the university satisfaction. The cognitive image involved

21 elements, including reputation, prestige, challenging access, quality of teaching, requirements, faculty, to name a few. The affective image focused on four feelings related to pleasure, boredom/stimulation, stress/relaxation and gloom/joy. The overall image could be rated as either positive or negative. Satisfaction was measured through comparison with the prior expectations towards the university and comparison with a perfect university and taking into account the current university satisfaction level (Beerli Palacio, 2002, pp. 493-494). The cited article demonstrates that the cognitive aspect influences the affective aspect and together they form the overall image, with the affective aspect having a grater contributing power. According to the above studies, the overall image has an impact on student satisfaction, with the affective aspect also being more prominent here (Beerli Palacio, 2002, p. 500).

Studies carried out in Portugal show that university image determines not only student satisfaction but also loyalty (the study group consisted of 2687 Portuguese respondents from public universities). The studies analyzed the direct and indirect impact of image, yielding the results presented in Table 1.

Image has a greater direct impact on satisfaction (0.45) than on student loyalty (0.23), and if we also add indirect impact, we obtain high levels of both variables (0.86 and 0.72, respectively), which suggests that university image can largely contribute to the satisfaction derived by students and shape their loyalty to their academic center (Alves, 2010, p. 82).

In employer branding, the best employers, ones that are the most desired by candidates, are referred to in the literature as 'employers of choice.' The term denotes an employer who has a strong and recognized brand, whom employees can trust, of whom they can be proud, and working for whom is a unique experience (Wojtaszczyk, 2009, p. 20). Such an employer provides an excellent workplace, for example by skillfully responding to the changing needs and interests of employees and the organization (Baker, 2014, pp. 1–2). Such an employer is very demanding, challenges its employees to make full use of their potential and builds strong employee relations (Leary-Joyce, 2007, p. 25). To sum up the above deliberations on university image, the author proposes a definition of a 'university of choice,' where the term means a university that has a strong, recognized brand, offers an excellent, satisfying place of learning, responds to the ever changing needs and interests of students, makes students proud, wins their loyalty and is listed by candidates as their first choice.

Objective and methodology of studies – image of the SGH Warsaw School of Economics

The above analyses suggest that successful competition on the market of higher-education schools requires first examining the image and then determining how and on what grounds it is construed by the recipients to ultimately learn how to shape it and what tools to use to communicate it to the recipients.

The first of the above stages, i.e. examining the image of the university, was the object of the studies carried out by the Management Education Research Team of the SGH Management Institute under the supervision of SGH professor Sławomir Winch, PhD, from March to July 2018.

The study group consisted of potential candidates for a Polish university of economics – SGH Warsaw School of Economics (SGH). The objective of the study was to analyze the image of the SGH in the eyes of candidates interested in pursuing their education there. The authors of the study wanted to learn in particular the candidates' opinions about the SGH and what guided them in their decisions to choose that particular school. The hypothesis, referred to as H0, was that the most important factors shaping the image of the SGH is high employability and high earnings when compared to the graduates of other universities. Poland has five public universities of economics: in Katowice, Kraków, Poznań, Wrocław and SGH Warsaw School of Economics in Warsaw. In addition, the education market offers plenty of private schools of economics as well as universities that offer economics or management programs which compete for the same candidates. The SGH is a university with over one hundred years of tradition. Its graduates include many famous economists who later held important positions in government and European administration, people of business and culture. The SGH has been leading in Polish university rankings for many years.

A questionnaire with four groups of questions was created specifically for the study. Those groups were related to university image, the sources of information about the university, the reasons for choosing SGH and the candidates' system of values. The questionnaire was distributed between April and June 2018 to those who met the criteria of the target group, i.e. secondary school students interested in enrolling on the SGH. The respondents included in particular participants of the SGH preparatory courses, attendees at the SGH Open Day, and high school students from the SGH

Table 1. Impact of image on student satisfaction and loyalty

	Direct impact	Indirect impact	Overall impact
Satisfaction	0.45	0.40	0.86
Loyalty	0.23	0.50	0.73

Source: H. Alves, M. Raposo, *The influence of university image on student behaviour*, International Journal of Educational Management, 24(1), 2010, 81.

Academic Class Programme.[1] A total of 433 properly filled out surveys were obtained. Since sample selection was targeted and the group is not representative, the results cannot be applied to the whole community. Still, since the study group was relatively large, preliminary conclusions regarding the trends among university candidates can be identified.

49% of the study group were women and 47% were men (4% gave no details in this respect). The majority of the respondents were born in 1999 (47%), 18% were born in 2000, and 13% in 2001 (17% did not answer the question). The questionnaires were filled out by high school students from big cities (a population of over 1 million – 25%; from 500,000 to 1 million – 16%) as well as medium-sized cities and small towns (from 100,000 to 500,000 – 24%; from 10,000 to 50,000 – 25%; below 10,000 – 3%). Only 2.5% of the respondents lived in villages.

Image of the SGH emerging from the study results

In the initial part of the study, the respondents were asked to finish the sentence 'The SGH Warsaw School of Economics is...' any way they wanted to, which was to check their general associations with the analyzed school.

A great majority gave an answer suggesting that they saw the SGH as Poland's top university of economics. The second most common answer involved development possibilities – the SGH was perceived as a school offering considerable opportunities, especially in terms of finding a good job. Examples of the respondents' statements: *the best university of economics in Poland, where students have good career prospect*s (survey 86); *a school that can produce good, entrepreneurial people* (survey 104); *a university of economics whose graduates find employment, which cannot be said about 90% of such universities in Poland* (survey 111). Many statements addressed the prestige of the university, e.g., *the university has good opinions in the country and is recognized by employers* (survey 90); *a prestigious university that offers good prospects for the future* (survey 101).

The study also checked to what extent the respondents agreed with opinions about the SGH suggested by the authors of the survey. In their responses, the survey participants used a five-level Likert scale, rating their opinions from 'Strongly disagree' (1) to 'Strongly agree' (5). The suggested opinions with the percentage distribution of 'Agree' and 'Strongly agree' responses are presented in Table 2 in decreasing order.

Three statements with which the respondents agree the most are: 'The SGH is the best university of economics in Poland' (83.6% – aggregate 'Agree' and 'Strongly agree' answers, taking into account the 'I don't know' answers), 'You can meet a lot of interesting people at the SGH' (79.4%) and 'SGH graduates positively stand out against other job candidates' (76%). So, the leading position of the SGH against other universities of economics and in relation to the

Table 2. Opinions about the SGH in the eyes of university candidates

	'Agree' and 'Strongly agree'	Arithmetic mean
The SGH is the best university of economics in Poland (W3)	83.6%	4.56
You can meet a lot of interesting people at the SGH (W2)	79.4%	4.33
SGH graduates positively stand out against other job candidates (W11)	76.0%	4.41
The university is a place where you can pursue your interests (W1)	72.3%	4.28
The SGH develops practical skills (W9)	72.1%	4.26
The SGH guarantees that you will learn foreign languages (W15)	71.3%	4.35
The SGH is an innovative school (W10)	61.7%	4.14
The SGH hires prominent business practitioners (W6)	57.9%	4.38
The school makes it possible to balance work and study (W13)	57.5%	4.18
The SGH is one of Europe's leading universities (W4)	49.8%	3.86
The SGH hires prominent scientists (W5)	45.5%	4.30
It is hard to get in the SGH, but it is easy to get through (W14)	41.3%	3.96
The SGH sets new trends in economics (W8)	37.4%	4.14
The SGH sets new trends in business (W7)	36.5%	4.15
The university is associated with the rat race (a materialistic approach to life) (W12)	20.8%	3.36

Source: author's own work.

[1] The SGH Academic Classes are selected classes in several dozen high schools in Poland that work with the SGH to introduce high school students to the academic world through joint classes with the participation of the university faculty (both at school and at SGH), implementation of various projects and organization of university tours.

labor market was mentioned again. A new appreciated variable is that the SGH offers opportunities to meet interesting people who may be highly valuable to the candidates in terms of their future career or friendship.

Respondents were also asked to specify which of the above opinions (W1-W15) was the most important to them. The most popular answer was W11, about standing out in the labor market (17.6%), followed by W3 – describing the SGH as the best university of economics in Poland (15.9% of responses).

The researchers also checked what were the contributing factors for choosing the SGH. The proposed factors along with the percentage distribution of 'Agree' and 'Strongly agree' answers are presented in Table 3 in decreasing order.

The following three factors were the most often confirmed by the respondents: 'High earnings after graduation' (94% – aggregate 'Agree' and 'Strongly agree' answers, taking into account the 'I don't know' answers), 'High earnings after graduation (91.2%) and 'High prestige of the SGH' (85%). For this question, the respondents were also asked to specify the one factor they found to be the most important. As many as 31.9% mentioned 'High earnings after graduation'. 'Employability' came second, with 29.1%. The presented percentage distributions confirmed the H0 hypothesis. However, other variables also may have contributed significantly and only a factor analysis could reveal the power of their impact on the dependent variable, i.e., the image of the SGH. A factor analysis assumes that there is a correlation between the dependent (actual) variable and independent variables – factors (Marcinkowska, Mider, 2013, pp. 339-359). The factor analysis involved the 15 variables discussed above: W1-W15.

Tests were conducted to verify the properties of the variables for the factor analysis: KMO measure (0.884), Bartlett's sphericity test ($\chi^2(105) = 2293.402$, $p<0.001$), determinant of the correlation matrix (0.005). Ten variables ultimately qualified for the factor model and they served as the basis for identifying five independent factors. Their structure explains about 78% of the total variance of the original set of variables. For the first of the factors, two variables – 'Setting new trends in business' and 'Setting new trends in economics' – explained 18% of variance from the SGH image. For the second one, factor analysis identified two other variables: 'Hiring prominent scientists' and 'Hiring prominent practitioners' (17% of the variance to be explained). The third factor is 'Pursing your interests' (16%). The fourth factor emphasizes the 'Practical dimension of the skills' (15%), and the fifth one – 'Balance of work and study' (12%). So, the original hypothesis should be supplemented with the following additional statement: 'Standing out in the labor market' and 'High earnings after graduation' are the most important reasons for enrolling on the SGH but candidates are searching for ways to achieve such goals. They see them in the opportunities offered by a university that sets new trends in business and economics, which were identified as variables in the factor analysis. Therefore, they combine the instrumental value of the education offered by the SGH (well-paid job) with knowledge-related values (learning about new trends in economics and in business).

The results differ from the studies quoted in the article, which list university reputation and tradition as the main factors determining the perception and choice of a university by the candidates (Oczachowska, 2006), although they do refer to the significance of the university's position against its competition and to the teaching level (Ryńca & Miśko, 2016). Curiously enough, the results are much closer to those obtained in a study involving 3652 students from the Wrocław University of Science and Technology, for whom the group of factors including 'future prospects' was of primary importance. The group included expectations related to future employment and to the attainable earnings (Gąsiorowska, 2004).

Conclusions

In the increasingly competitive European market of higher-education schools, the role of building and sustaining an appropriate image in the eyes of a wide range of stakeholder groups is gaining importance. The study helps explore the main factors determining how universities are perceived by university candidates. Study results show how important it is for the educational offer to be tied to the labor market and the future career of the candidates, and the factor analysis also adds the element of setting new trends in economics and business. The analyzed foreign studies signal that effective activities in the area of image-building may help a university not only attract the top candidates but also maintain a high level of satisfaction and loyalty among its students. Drawing from employer branding and from the 'employer of choice notion,' the author developed an original definition of a 'university of choice.'

Research regarding university image should be continued, for instance due to its practical implications. The future analyses in this area may focus on: differences between the image construed by students before enrolling and after graduation; comparisons between the image in the eyes of candidates for various specialties (e.g., universities of technology, economics, other); comparisons between the image from the perspective of various groups of stakeholders connected with the university; researching image-building tools and their effectiveness.

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Abstract

The article aims at broadening the knowledge in the area of the image of a university. It provides an overview of research on factors influencing the perception of a university and its impact on the satisfaction and loyalty of students. The author also proposes a definition of the 'university of choice.' The paper is based on the results of research carried out on a sample of over 400 respondents – candidates for studies at a Polish state economic university: SGH Warsaw School of Economics. One of the aims of that research was to examine their perception of the image of the university. The results obtained indicate the importance of links between the educational offer, the labor market and future careers of candidates, while the conducted factor analysis provides some additional information concerning new trends in economics and business.

Keywords: image; reputation; prestige; candidate for studies; university of economics

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Digitalization and Competitiveness in the Logistics Service Industry

Marzenna Cichosz[*]

The second decade of the 21st century is best characterized by the term 'the digital age.' Intensive (exponentially growing) technological progress has become part of business for producers, their suppliers, consumers, and also logistics service providers. Consultants specializing in the field of supply chain and logistics (e.g., A.T. Kearney & WHU, 2015; PwC, 2016; Langley et al., 2017) emphasize that modern transport and logistics cannot do without technology. Sensors, robots, automation, cloud computing, data analysis, 3D printing, autonomous vehicles, artificial intelligence, digital twins or blockchain technology on the one hand enable, on the other, trigger changes in supply chains and logistics, and thus also affect the logistics services industry.

Introduction

While analyzing technological changes in the environment and their impact on the innovativeness of enterprises in the logistics service industry, it is worth paying attention to two issues. Firstly, logistics service providers (LSPs) in response to emerging intelligent factories and Industry 4.0, using technological and process innovations, must shift logistics to a higher level of integration and efficiency of logistics processes – Logistics 4.0 (Paprocki, 2016). Secondly, the balance of power in the logistics service industry is changing. The new technological players with their innovative business models are joining in the competition for customers. These processes constitute a threat that can destroy the industry or can be treated as an opportunity to strengthen the innovativeness of the industry and its participants. In connection with the above, the following research questions arise:

RQ1: How does digital technology change the balance of power in the logistics service industry?

RQ2: How does digital technology influence the business models of logistics service providers?

RQ3: Are the changes that we are observing *a digital destruction* (like Schumpeter's creative destruction) or maybe *a digital transformation* that LSPs are faced with in order to avoid creative destruction?

This article responds to the request reported by Rutkowski (2011) regarding the consequences of the growing role of advanced technologies and automation (one of the six global megatrends indicated by the author) in supply chain management and logistics. This article aims to show the changes that take place in the market of logistics services as a result of the development of digital technologies and the emergence of new players and analyze the consequences they bring for business models of LSPs. It is also important to present examples of actions taken by leaders in the fight against technology not becoming the cause of the digital disruption of enterprises and maybe even the entire logistics industry in the way that we know it. The theoretical framework of the analysis is Porter's 5 forces model, which was applied to research conducted in the area of innovation and technology in logistics. The work was based on the analysis of secondary materials, i.e., innovative logistics solutions, reports of research agencies and consulting companies, as well as literature studies. The deduction method was used.

The structure of the article is as follows. The first part discusses the issue of digitization and key technological trends in the supply chain and logistics. Next, the methodology of the study is presented, allowing for the analysis of competitive forces occurring in the logistics service industry in the face of technological changes. At the next stage, the author started a discussion on the impact of technological innovations on operations, business models and the strategy of LSPs, presenting examples of their hybrid business models. The conclusion presents potential directions of future research.

Digitalization of the supply chain and logistics

Digitalization is a reflection of an object or analog activity in binary form (Gartner IT Glossary). The European Commission describes digital transformation as the process of combining advanced technologies with the integration of physical and digital systems. The process is dominated by innovative business models and new processes, as well as the creation of intelligent products and services (EC, 2016).

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Brynjolfsson and McAfee (2015, p. 19) appraise that (...) *digital technologies can now become just as important to society and the economy as the steam engine once*. We are dealing with the fourth industrial revolution in which two and a half billion final users are connected to the internet thanks to mobile technology (Statista, 2018). That means they can transmit in real time information about their needs and wants upward the supply chain where machines and devices connected by the Internet of Things (IoT) use them to organize procurement and production processes. Moreover, thanks to advanced analytics and artificial intelligence systems can improve themselves. Such factory, referred to as intelligent, is the basis for the concept of Industry 4.0 (Szozda, 2017). The primary goal of Industry 4.0 is the radical transformation of traditional production processes into intelligent processes managed by self-controlling mechanisms. As Paprocki (2016, p. 187) observes: *Logistics 4.0 is needed as a reaction to Industry 4.0 development*. It focuses on the integration of logistics process participants (i.e., primarily manufacturers, LSPs and infrastructure operators) to flexibly respond to customers' demand.

According to the World Economic Forum (2016, p. 4), digitization in logistics can grow up to 1.5 trillion USD in value by 2025. The innovation and adaptation of advanced technologies is key to the process of digitalizing the supply chain[1] and logistics[2]. The list of technologies used in the management of physical flows in supply chains is the subject of many studies (e.g., A.T. Kearney & WHU, 2016; PwC, 2016; Langley et al., 2017; DP DHL, 2018; Gartner, 2018). Table 1 presents the results of an analysis carried out by the Innovation Center of one of the LSPs. The results are divided into two groups depending on the estimated time of their adoption. Technologies that will be used in logistics and supply chain management in the next five years belong to the first group and those that will be used in perspective longer than five years to the second.

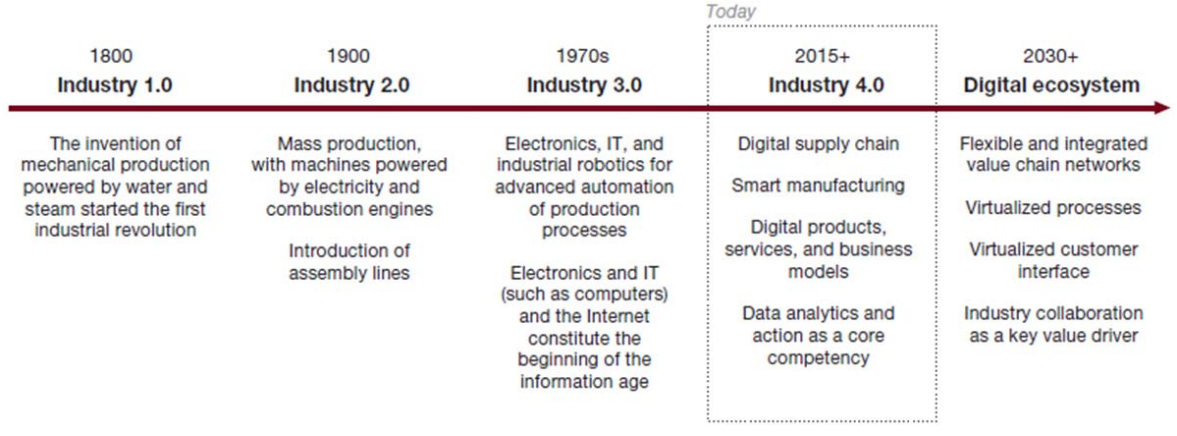
The technologies listed in Table 1 are applied in logistics and supply chain management in order to serve: material flows in the physical world (i.e., within supply 4.0, production, intelligent warehouses, spare parts' management, distribution to final consumers (B2C), autonomous logistics and transport) and to improve processes in the virtual world (i.e., integrated planning, analytics or ensuring the visibility of cargo throughout the supply chain) (PwC, 2016). This cyber-physical duality is the basis of Industry 4.0 (e.g., Paprocki, 2016; Pfohl et al., 2017; Szozda, 2017). It is increasingly emphasized that technological changes taking place in enterprises and their surroundings are a step towards the digital ecosystem (Figure 1),

Table 1. Technological trends according to DP DHL Logistics Trend Radar (2018)

	Relevant in < 5 years	Relevant in > 5 years
Technological trends presented according to its importance for logistics service industry from the most important (potentially disruptive) to incremental improvements	• Robotics & Automation • Internet of Things • Cloud Logistics • Big Data Analytics • Augmented Reality • Low-Cost Sensor Solutions	• Self-Driving Vehicles • Artificial Intelligence • 3D Printing • Unmanned Aerial Vehicles • Blockchain • Next-Generation Wireless • Bionic Enhancement • Virtual Reality & Digital Twins

Source: DP DHL *Logistics Trend Radar* (2018) and Paprocki (2018).

Figure 1. The evolution of enterprises towards a digital ecosystem



Source: PwC (2016). *Industry 4.0. How digitalization makes the supply chain more efficient, agile, and more customer-focused.*

[1] Here: the collaboration among business network partners to provide value to final consumers.
[2] Here: the management of goods and information flows.

in which physical operations will have their mapping in the digital world and collaboration between participants of distributed networks will be a key value creator. Companies operating in the logistics services industry must find their footing in that reality.

Research method

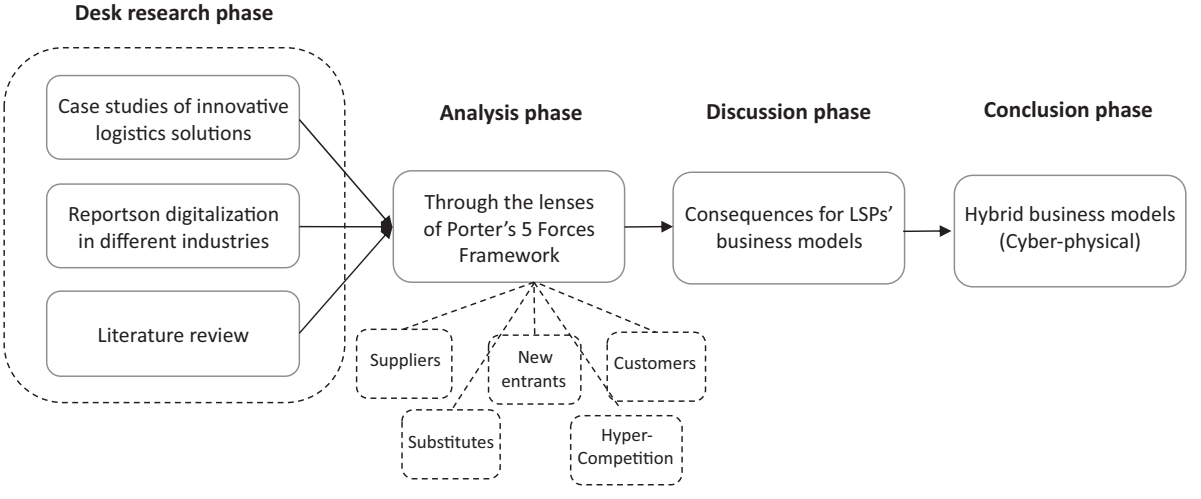
It is a conceptual paper based on the desk research method (Figure 2). The first step of the research was carried out within the 'Logistics Innovations' project launched by the author for students of Logistics class as part of the master studies at SGH Warsaw School of Economics in 2018. It aimed at screening the market and collecting technological innovations in logistics. Throughout the semester, students investigated the internet and published posts referring to press releases, infographics, presentations and videos regarding logistics innovations. They reported their findings in four areas: transport management, warehousing, inventory management and others. Students were asked to apply Design Thinking approach and present each solution from the perspective of the problem addressed by it. As a result, a database of 43 innovative logistics practices was created. These included both solutions that improve operational efficiency within existing business models and innovative business models themselves. The collected examples serve as an illustration in this paper.[3]

The second stage of the desk research was devoted to the analysis of the reports of research agencies and consulting companies regarding technology, digital transformation and innovations in logistics and supply chain management. That included A.T. Kearney & WHU (2016), PwC (2016), Langley et al. (2017), DHL (2018), and Gartner (2018) reports. The research allowed for the identification of both technological trends in logistics and supply chain management and the level of their implementation in the logistics services industry.

The last stage of the desk research was literature review. The Scopus database was searched using the following keywords: 'digital transformation' AND 'business model' AND 'logistics.' Phrases were searched for in the title of the article, its abstract, and the keywords. Twelve publications from the database fulfilled those criterias. Then, the search was narrowed to 'Business, Management and Accounting' subject with seven publications identified. Based on their abstracts, the author selected papers for the analysis. The list of papers has been extended by selected items written in Polish referring to the logistics service industry as well as to innovations and technology in supply chain management and logistics available in BazEkon.

The author applied Porter's 5 forces model as the framework for the analysis of changes taking place in the logistics service industry and their impact on LSPs' business models. Next, the deduction method was used to discuss how technological changes affect business models in the logistics services industry. That resulted in indicating, on the one hand, the existing threats and on the other, the main characteristics of an innovative business model that has become a kind of 'must have' for the industry. The solutions based on hybrid models combining 'the old' with 'the new' are presented in the form of mini case studies.

Figure 2. Research method model



Source: author's own study.

[1] Here: the collaboration among business network partners to provide value to final consumers.
[2] Here: the management of goods and information flows.

The analysis of competitive forces in the logistics services industry in the era of digitalization

Industry and business models of logistics service providers

The logistics services industry can be defined as a group of enterprises that organizes processes of goods and information's flow on behalf of other market players (Kawa, 2017). These companies provide services related to transport and logistics referred later in the text as T&L. Both in Poland and around the world, the logistics service industry is internally very diverse and fragmented. There are several dozens of big players in Poland, which in total generate about 5% of turnover (Zysińska, 2013) what results in fact that innovations and technological changes are not common. Moreover, the industry is very diversified in terms of services provided. One can distinguish: transport and forwarding trade companies, logistics service providers (LSPs), couriers, express and parcel operators (CEP), postal operators, railway operators, air operators, maritime ship owners, inland navigation companies and terminal operators.

Delfmann and Albers (2002) divided logistics players into three groups depending on the range of services they offer. The first group includes suppliers of standard, logistics-critical services, for example transport and storage (2PL, second-party logistics). The second group consists of entities offering service packages, i.e. standard services combined with value-added services (for example, packaging, labeling, fulfillment), prepared on the customer's request (3PL, third-party logistics). The third group of entities is operators who offer comprehensive tailored logistics solutions. That includes 4PL (fourth-party logistics) operators who combine the resources, skills, and technology of their organization and other companies to design a complete solution for the entire supply chain on supply and distribution sides as well (Hanus et al., 2010).

The range of services offered by LSPs differs not only in terms of the subject but also in the geographical scope of activity. There may be services provided locally (mostly within the city), nationally, internationally and on a global basis (Cichosz and Pluta-Zaremba, 2013). As a consequence, LSPs have different approaches to creating value for customers and capturing it from them, which translates into various business models[4] used in the industry (Płaczek, 2012). Prockl et al. (2012) claim that two generic models exist: a '*service factory*' focused on improving the efficiency of processes through their standardization and '*lernstatt*,' the learning organization model oriented on relationships and interaction with the customer.

Porter's 5 forces model

The Porter's 5 forces model (Porter, 2008) was used to analyze competitive forces affecting the logistics service industry. The analysis was carried out through the prism of changes related to technological innovations and startups that appear in the industry, i.e., on the suppliers and customers' side (vertical competition) and as a result of the threat of new entrances and the appearance of substitutes (horizontal competition) (Figure 3). These forces increase the intensity of competition within the industry, which is referred to as hyper-competition (Cichosz, 2018).

New entrants

As noted by Porter (2008, p. 8) *new players entering the industry bring new potential and a great will to fight for market share, which is reflected in the prices, costs and level of investment necessary to compete*. In order to survive, they must overcome entry barriers and be ready to face the opposition of already existing players and the consequences of their unwilling welcome. The exponential growth of technology and technological solutions observed in the logistics means that we are not talking about the threat of appearing new entrants, but about new entrants themselves and the risk, they pose to the industry. The list of new entrants to the logistics industry includes following:

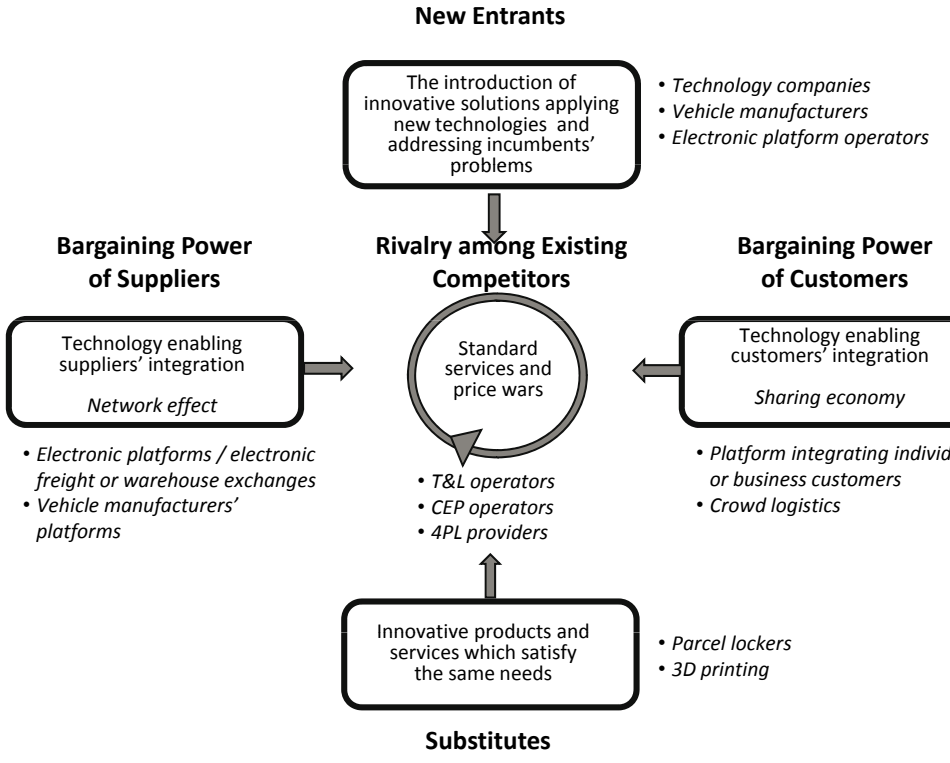
- technology companies operating in the retail industry, for example Amazon and Alibaba; previously, they were customers of LSPs, nowadays they invest in logistics; at first, in warehouses and modern technology-supported warehouse management systems, next in leasing means of transport (including airplanes),[5] development of new methods of transport and delivery such as the use of drones (Amazon Prime).[6] In this way, technology companies obtain new competences that make them the competitors of LSPs;

[4] The business model describes how the organization creates value for a customer, at the same time capturing profits from its operations (Osterwalder and Pigneur, 2012). Gołębiowski and others (2008) emphasize that the business model is a tool that presents the logic of the enterprise's operations. It includes a description of the value offered by the company to a group or groups of customers along with the definition of primary resources, processes (actions) and external relations of this company, which may be used to create, capture and deliver value and to ensure the company's competitiveness in a given field. In line with this goes the approach of Nogalski (2009, p. 45), where he points out that *the business model formulates the framework of business logic and its features such as innovation and competitiveness.*

[5] http://time.com/4440542/amazon-one-airplane-fedex-ups/

[6] https://www.amazon.com/Amazon-Prime-Air/b?ie=UTF8&node=8037720011

Figure 3. Competitive forces in the logistics services industry in the era of digitalization



Source: author's own study.

- vehicle manufacturers who invest in a car fleet, and then make them available to enterprises or individuals in the *sharing economy* model, for example Daimler offering various types of CAR2SHARE services, including VAN2SHARE[7] (Paprocki, 2016); or vehicle manufacturers working on a car model, which may be the base station (mobile point of collection/delivery of the package) for drones – a service developed by Daimler as part of the Matternet project;[8] and work on an autonomous vehicles for parcel deliveries made by Ford Motor Co.;[9]
- electronic platform operators, offering logistics services in the *crowd logistics* model, i.e., combining the supply of free space in cars with the customers' demand for transport services on a given route; this is primarily about the space in private vehicles and transport in the C2C – consumer-to-consumer or C2B – consumer-to-business model. PiggyBee[10] (parcel transport service in the C2C model) and Stowga[11] (rental of free storage space both in private garages in the C2C model and professional warehouses in the B2B model[12]) are the examples of such services; virtual platform operators are newcomers who strengthen the position of suppliers and sometimes also the individual customers.

Growing bargaining power of suppliers

This advantage stems mainly from the fact that thanks to technology, both suppliers and customers can combine their forces and influence the logistics service industry. That happens, through the use of platforms (Witkowski, 2018), such as electronic freight and warehousing exchange markets (Kawa, 2014). The more suppliers or customers operate within the platform, the stronger is its impact (in economics this is called '*the network effect*'). The advantage of using the exchange platform is the direct contact of the customer and the carrier, which speeds up the process and reduces its costs. Very often, platforms offer services that add value to the transport process, such as cargo tracking services. Examples of electronic freight exchanges that change the logistics service industry

[7] https://van2share.net/en/
[8] In June 2018 Boeing has invested in Matternet: https://mttr.net/
[9] https://www.bloomberg.com/news/articles/2018-01-30/nuro-has-built-a-robot-van-to-deliver-your-stuff
[10] https://www.piggybee.com/en/
[11] https://www.stowga.com/
[12] It should be noticed that sometimes there are doubts whether professional warehouses offering their free space to other business clients can still be considered as the 'crowd'.

can be: Teleroute[13] (the first European platform), TimoCom[14] (an exchange operating in 44 countries), Trans.eu[15] (the Polish exchange that is transforming into a platform) or Cargonexx.[16] The latter electronic freight decided to use artificial intelligence (AI) to determine the market price of cargo transport, which is offered to the customer before the carrier, ready to offer the given road transport, is chosen. Registered freight forwarders enter orders into the Cargonexx platform and automatically receive a price proposal within a maximum of two minutes. When they confirm it, Cargonexx which describes itself as a responsible forwarding partner takes over the request. Registered carriers are then automatically informed about available orders and can accept them with one click. That allows for a much faster conclusion and execution of transactions than in the traditional freight exchange model. That is the way how Cargonexx redefines the value for both the customer and the carrier.

The suppliers' platforms are also built on the platforms of vehicle manufacturers (for example, Daimler, Volkswagen). Thanks to the systems embedded in cars, manufacturers can collect and analyze vast amounts of data which they can use to develop comprehensive solutions for logistics and supply chain management.

Growing bargaining power of customers

The platforms described above could also build bargaining power of customers. They allow one to share free transport or warehouse capacity. uShip is an example for transport services,[17] Stowga for storage services.[18]. Platforms could integrate even final consumers. This is coined the crowd logistics . The 'last mile' service delivered within the crowd logistics is offered, for example, by Deliv[19] (analysis of the solution presented by Castillo et al. 2017) or Amazon Flex.[20] Reduced number of trips in the city and a faster response to the demand reported by e-consumers should be mentioned among the key benefits.

Substitutes

A substitute is a product or service that meets the same need. Thanks to technology and human creativity, new solutions appear that successfully replace traditional logistics services. An example of a substitute for delivery or collection of service to or from a consumer as part of e-commerce logistics are deliveries to parcel lockers set in public places – most often at railway or bus stations, petrol stations, shopping centers or university campuses. This solution eliminates the problems of customer availability in the area of delivery (home or work) and relatively narrow delivery time slots resulting from courier working hours. At the same time, it enabled reducing delivery costs since the courier does not have to visit each customer individually. In the Polish market, the concept of parcel lockers was popularized by InPost[21] which at the end of September 2018 had over 3,000 parcel lockers in 428 cities in Poland.

Another example of a substitute for logistics services is 3D printing (in other words additive manufacturing or incremental production), i.e., a set of technologies allowing for combining materials (e.g., plastic or metal) to produce physical three-dimensional objects based on their computer model. The use of 3D printing changes the configuration of supply chains and allows for massive customization (Rutkowski and Ocicka, 2017). From the LSPs perspective, 3D printing changes the approach primarily to managing slowly-rotating stocks, such as spare parts. Companies do not have to maintain them in regional distribution centers and transport them to the customer when there is a demand for them, but spare parts can be produced on the spot at the time, and in the place, they are needed. It causes a drop in the demand for warehouse space and storage services, but also for transport. In the case of 3D printing, the carrier is mainly used to deliver the right raw materials to the right place of production. However, it should be emphasized that at the current stage of development in 3D printing, only selected niche spare parts or a small series of customized products can be produced this way. On the other hand, as additive manufacturing technology is constantly improving, and the model of its use is refining, this solution could pose a threat to the logistics services industry in the future.

Increasing rivalry among existing competitors in the logistics services industry

It is getting very crowded in the logistics services industry. We observed the first wave of the competitive struggle at the beginning of the 21st century, when T&L and CEP operators began to expand their service packages. As a consequence, the areas of activity of individual operators began to penetrate each other, and in many cases also overlap (Cichosz and Pluta-Zaremba, 2013, p. 90). The second wave of competitive struggle took place in the second decade of the 21st century with the emergence of technological startups, which, thanks to an innovative approach to the provision of logistics services, are able to offer customers

[13] https://teleroute.com/pl-pl/
[14] https://www.timocom.pl/
[15] https://www.trans.eu/en/
[16] https://www.cargonexx.de/pl
[17] https://www.uship.com/
[18] https://www.stowga.com/
[19] https://www.deliv.co/
[20] https://flex.amazon.com/
[21] https://www.inpost.pl

an extra value i.e. higher quality at a lower price. The situation is very difficult for incumbents. Their margins are at the level of several percent which do not allow for large investments in technologies. The lack of investment in technology limits the improvement of operational efficiency and an innovative customer experience. Therefore, the critical issue for incumbents is to respond to the changes so that the technology that enters the industry does not have the character of digital disruption which is the equivalent of Schumpeter's *creative destruction*, the process responsible for the demise of organizations, industries or even entire economies that could not adapt to the changes taking place. The situation also raises the issue how to use technology as an activator of changes and development in logistics operators, their strategies and business models what will be the subject of analysis in a further part of the study.

Discussion on the digitalization of business models in the logistics services industry

Threats to current models of logistics service providers

The analysis of the areas where innovative new players in the logistics service industry are particularly active leads to the conclusion that most endangered are LSPs offering simple, standard services in the *'service factory'* model. Their offer can easily be replaced by an innovative offer from technology players. The storage and transport services for e-commerce are a good example of such actions. It is one of the most dynamically developing segments of the logistics market (about a 20% increase each year) where the majority of innovations appears. Examples are robots for handling warehouse picking process, autonomous vehicles for city deliveries, drones for delivering packages in hard-to-reach places, parcel lockers, including mobile ones. In many cases, the solutions offered by innovators refer to the problems that exist in traditional models and are associated, for example, with the improvement of operational efficiency or deliveries completed as part of the 'last mile.' If innovators offer the customers greater value (i.e., higher quality at a lower price), they can grow at the expense of the traditional services market. Moreover, the ease of scalability of an innovative business model can lead, in the long term, to the domination of innovators in a given market segment.

Development of electronic platforms may also place at a risk services related to the coordination of logistics activities (for example, services offered by 4PL providers). Their business model is based on the ability to connect partners' resources and offer a comprehensive service. This competence is more and more often taken over by platforms. Access to a more extensive network of LSPs or the use of big data analytics constitutes the competitive advantage of innovative solutions of online platforms, electronic exchanges, and shared service platforms. The downside here is the relatively low level of trust that customers have for service providers available through those platforms. Therefore, virtual platform operators are mainly used to handle spot transactions.[22] However, one should keep in mind that the efforts to effectively certify platform participants and increase the level of trust in them are underway and therefore such services may soon become a significant threat in the contract services segment as well (Witkowski, 2018).

Also, the LSPs applying the *lernstatt* model can constitute a threat. Thanks to the use of analytics of big data sets (as in the case of platform operators) and machine learning, it becomes possible to predict the future with an accuracy of up to 95%[23] which allows digital players to reach customers with a proactive offer and increase the level of satisfaction within the customer experience.

Hybrid business models in the logistics service industry

The analysis of activities undertaken by big players from the logistics service industry leads to the conclusion that the leaders of the CEP and T&L markets quite quickly noticed that changes caused by new technology and startups need their action. The leaders decided to maintain their existing business while expanding into new digital business models, i.e., the old, proven business models were in most cases supplemented with innovative business models[24], and so-called hybrid business models were built.

On the market, we observe a twofold approach to creating innovative models within hybrid business models. On the one hand, big players like DP DHL launch Innovation Centers and build their own technology startups, such as Saloodo!. On the other hand, there are players (not only small and medium, but also large LSPs) who decide to make use of knowledge available on the market and cooperate with partners, including technology partners within the open innovation concept when moving towards being more digital (Cichosz, 2018).

[22] Spot is a transaction concluded for immediate delivery and payment (usually two business days).

[23] http://www.transmetrics.eu

[24] Business model innovations are changes in defining, creating, delivering and capturing values within the business model (Teece, 2010). Basically, there are two ways to bring innovation to the business model. The first one is an evolutionary approach, in which the enterprise experiments and introduces changes to selected elements of the model (i.e., in contacts with key suppliers or customers, in terms of applied activities, resources, channels or customer relations, which leads to changes in the cost structure or revenues) (Amit and Zott, 2010). The second approach is a revolution, where one business model is replaced by another (Bock et al., 2012).

DP DHL and Saloodo!

DP DHL is a global leader in the logistics service market (Armstrong & Associates, 2017; Brdulak, 2018). As part of its Technology and Innovation Center, DP DHL has developed a digital Saloodo! platform, which is part of 'Strategy 2020: Focus. Connect. Grow.' The platform was launched in Germany as a tool aimed at small and medium-sized shippers and carriers. It allows the carriers to optimize the use of the rolling stock of trucks (topping up vehicles, minimizing empty mileages). Thanks to the mobile application, drivers have real-time access to information about orders and routes. The main value for the customer is the ease of access to information about the possibility of transport (full-truck, but also part-truck), the speed of the transaction, and a number of additional services such as requests for quotes, invoicing in national currencies, various forms of payment by credit cards, PayPal accounts or SEPA transfers. At the end of 2018 on the Saloodo! platform over 6,000 carriers with over 250,000 trucks were registered. The platform covered the reach of 25 European countries (https://www.saloodo.com).

DB Schenker, uShip and Drive4Schenker

DB Schenker is a global logistics operator on the T&L market, providing innovative solutions for logistics and supply chain. In 2017, the company ranked fourth in the world in terms of revenues (Armstrong and Associates, 2017), and the third in Poland (Brdulak, 2018). In 2016, the company announced the implementation of the digital transformation strategy. As part of the changes alongside the traditional road, air and maritime transport, contract logistics and 4PL logistics, in 2016 DB Schenker invested in strategic technology partnership with the uShip US transport exchange and based on their software created a new business model within the group. The free Drive4Schenker digital platform is aimed at the drivers and allows them to find return cargo throughout Europe. The platform does not replace but complements the traditional contract logistics business model, and by addressing the challenge of minimizing empty mileages, it allows participants to increase the efficiency of rolling stock utilization (https://d4s.dbschenker.com).

UPS, Ware2Go and partnership for 3D printing

UPS is a global courier company operating on the CEP market, which decided to expand its portfolio of business models with digital models. One of the UPS research initiatives is the launch of the Ware2Go digital platform announced in August 2018 (https://www.ware2go.co). The platform connects e-sellers, whose short-term needs are for storage space and inventory fulfillment services with operators, who have potential in this area. The service is addressed mainly to small and medium-sized e-businesses that operate in the B2B segment who need fast deliveries and cannot afford to organize an effective distribution network. In this way, UPS, using a digital platform, extends the service package with warehouse services and offers new value to customers in the innovative digital platform model.
UPS also works in the 3D printing segment. In a technological partnership with Fast Radius (additive manufacturing specialists) and SAP (ERP system specialists), using its global distribution network, it offers customers (including production companies) the option of placing an order through a website and printing at the UPS handling point equipped with a 3D printer, a product which UPS couriers will next deliver to the customer (Conner et al., 2014).

Common features of innovative business models

Analysis of the above mini case studies allows creating a list of characteristic features of innovative business models in the logistics service industry. These are primarily: hyper-connectivity, cooperation, and integration of network participants and the related adaptiveness of the system to the changing environment. The list with a short discussion is presented in Table 2.

Conclusion

A modern, hyper-competitive market of logistics services, with new entrants including those from technology and automotive industries, as well as consumers implies that the incumbents should undergo transformation and develop innovative business models. As noted by Płaczek (2012, p. 206), *logistics service providers (...) are not limited to the implementation of one business model and use different models in parallel*.

Table 2. Determinants of innovative business models in the digital era

Feature	Description
Connectivity	All elements of the supply chain are connected. Hyper-connectivity allows for the visibility of the product throughout the entire supply chain (end-to-end visibility).
Cooperation	The digitization of the participants in the supply chain facilitates vertical, horizontal and lateral cooperation to better use resources and provide customers with higher logistics value.
Integration	Integration, firstly, in the process dimension, secondly, in the area of data and information exchange.
Adaptiveness	Digitization refers to open, dynamically adapting systems. The system of digital resources can adapt itself as well as be adapted to changes (more on adaptiveness of LSPs one may find in Świtała et al., 2018).

Source: author's own study.

Thus, the real world of logistics flows is complemented (not replaced) with a virtual world in which sensors, robots, automation, cloud computing, data analysis, 3D printing, autonomous vehicles, artificial intelligence, digital twins or technology blockchain provide customers with logistics services of greater value (i.e., higher quality at a lower price).

In the case of logistics industry leaders, digital business models are most often a supplement to traditional, already proven models, which results in hybrid solutions. Due to the pace and scope of changes, LSPs are becoming more open to the knowledge and skills of partners (including technology partners). Cooperation with them gains more significance nowadays. The aim of this cooperation should be both to improve existing solutions and to develop and implement breakthrough innovations (Cichosz, 2018).

The subject of the digital transformation of the logistics services industry is very broad and at the same time scarcely explored in the literature referred to logistics and supply chain management. This study does not attempt to be exhaustive. Further research is required. It would be particularly interesting to learn to what extent the customers accept innovative solutions and business models introduced to the logistics services industry by its leaders. It is also worth looking at this issue from the experts' perspective and getting to know their opinions and recommendations on the direction of evolution in the logistics service industry. In turn, regarding the management sciences, it would be particularly interesting to examine the mechanisms of managing the digital transformation, barriers and success factors.

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Abstract

This study aims to present changes that are taking place in the market of logistics services as a result of the development of digital technologies and show their influence on the business models of logistics service providers. In her research, the author applied Porter's 5 forces model as a theoretical framework for the analysis in the area of innovation and technology in logistics. The study uses the deduction method. This is a conceptual paper based on the analysis of secondary materials, i.e., examples of innovative logistics solutions, reports of research agencies and consulting companies, and literature studies. The results of the analysis show that we are dealing with the digital transformation of the logistics service industry (not digital destruction). Technologies like sensors, robots, automation, cloud computing, data analysis, 3D printing, autonomous vehicles, artificial intelligence, digital twins or blockchain technology supplement but not replace the real world of logistics by providing customers with higher logistics service value.

Keywords: digitalization; digital transformation; logistics service provider (LSP); competitive analysis; hybrid business model

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Integration of the children's universities community in Poland

Children's Universities Congress

Every year since 2014 people engaged in the activities of children's universities in Poland gather to discuss the broad spectrum of issues related to this form of education offered to the youngest learners. Topics cover didactic means and methods, effective use of technology as well as some organizational aspects.

The concept behind the Congress is to establish the common space for sharing experiences and collaborating on the solutions to the challenges that children's universities face nowadays. It is also the place and the time when leaders of children's universities can present their achievements, examples of successful participation in national and international projects, and many more.

Association of Children's Universities

The Congress meetings also became the inspiration for the leaders of children's universities in Poland to create a common platform that would support sharing passions and joining the efforts on further development of this type of non-formal education. During the I Congress of Children's Universities, its participants agreed on the necessity to join the efforts and to create the organization that would provide the space for collaboration and exchanging the ideas. In 2015 the Association was established and officially registered.

The representatives of the universities, NGOs or any other institutions organizing classes for children and youth within the scope of children university are welcome to join the Association.

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