EVALUATION OF STUDENT PROFESSIONAL TRAINING IN THE
STUDENT EDUCATION PROCESS

Małgorzata Zajdel¹, Małgorzata Michalcewicz-Kaniowska¹, Krzysztof
Andruszkiewicz¹, Beata Durau-Banaszewska¹, Monika Klemke-Pitek²

¹ Faculty of Management, UTP University of Science and Technology (POLAND)
² Faculty of Agriculture and Biotechnology, UTP University of Science and Technology
  (POLAND)

Abstract

Professional training is an essential milestone in the higher education process and it is obligatory in
the studies syllabus. Professional training should be evaluated due to its great importance in the
process of education. Such training is a form of learning how to acquire knowledge in the education
process, mostly facilitating students’ acquisition of the key skills and competences.

This research problem concerns the analysis of the professional training process operating at the UTP
University of Science and Technology in Bydgoszcz, the biggest technical school of higher education
in the Kujawy and Pomorze region in Poland. Since 2012 the University has been running the Internal
Education Quality Assurance System; its basic document is the Quality Book.

As part of the comparative analysis, student training was evaluated across all the faculties. To solve
the research problem, a few research methods were applied. A detailed internal documents analysis
was made. With the research scope and topic in mind, the available information provided on faculty
websites was reviewed; the general professional training regulations, framework training plans for
respective majors, degree programs and forms of studies, contact details of tutors and coordinators,
training schedules and the availability of forms required for the adequate training organization.

Each deputy dean for teaching and students affairs was interviewed and provided their evaluation of
the operation of professional training and offered how to enhance the training. This is how the
professional training organization method was analyzed for all the faculties, e.g. the organizational
structure, the number of people responsible, the number of hours per tutor and the number of students
per tutor.

The professional training organization form was verified and the student documents, including the
professional training daily reports, were randomly evaluated. A high variation in organizational training
structures was identified. Even though the organizational professional training structure individually
adjusted to the specific nature of studies at faculties is mostly positive, frequently an excessive
number of students per tutor and a low number of tutors involved in the process of professional
training organization can trigger some concern. All that can have a negative effect on the evaluation of
the education effects reported throughout the training. A decrease in the number of students per tutor
acting as a professional training supervisor would be required. The daily training reports used by the
student have been operating at the University in an almost unchanged form for a dozen or so years.
Taking care of a high education quality requires actions to update the reporting document and to
adjust it to contemporary standards compliant with the major. It is recommended to decrease the
number of students per tutor acting as a professional training supervisor as well as to adjust the
structures to a given major. Website information must be immediately updated. Launching practical-
application profile majors requires a variation in the principles of training organization, as compared
with general academic profile studies. It is also necessary to increase the active participation of
employers in, for example, the process of verifying the education effects.

Keywords: evaluation, professional training, education process, school of higher education.

1 INTRODUCTION

Current conditions of operation and an increased educational competitiveness between schools of
higher education as well as a growing awareness of the higher education candidates increase the
scope and variation of actions affecting the acquisition of students. Interestingly, in the Polish
education system the school-of-higher-education diploma “brand” was not essential; now, however,
with such a high level of competition across the schools of higher education to win the student, it is the
diploma “brand” which starts to be important and be decisive in terms of which school of higher education would remain on the educational market [1].

The research shows that the quality is becoming one of the key factors of competitiveness across schools of higher education. With that in mind, they have been successively introducing mechanisms which aim at enhancing the education quality by introducing own internal education quality evaluation systems [8]. Under the Bologna Declaration, the primary objective of higher education is to make the graduates ready for the European and domestic market needs, educating students to become active citizens and to enhance learners’ personality development [2]. It is stressed that in modern Europe it is the education and training which are considered measures facilitating an accomplishment of a greater economic competitiveness, sustainable development and productivity as well as increasing the social cohesion [4].

Considering the fact that education is a process of acquiring knowledge, skills and experience, one can consider professional training provided for in the program plan to be essential in the process of professional preparation of future graduates and to help developing student activity and entrepreneurship as well as practical knowledge application skills.

The study program must determine the training time, ECTS, professional training principles and form for each major; both practical and general-academic majors [7].

Compliant with the applicable regulations, classes related to a practical professional training, provided for in the study program for a practical-profile major must facilitate the performance of practical actions by students. It is thus necessary for the teaching process to include people a majority of who have acquired professional experience outside the school of higher education corresponding to the classes offered [7].

One should remember that the Ministry of Science and Higher Education has held a meeting in the Copernicus Science Centre in Warsaw on student training with representatives of the business world, schools of higher education and student community. The debate and workshops demonstrated that employers’ needs and expectations must be factored in, including the area of soft competencies. In the opinion of employers and the student community, schools of higher education should introduce a training quality evaluation system and include student professional training in the program of all the majors. The task of the Ministry was to ensure funds, e.g. for such actions as part of the Operational Program: Knowledge Education Development. One of the essential recommendations was to establish a networking providing information on good training facilitating a development of better standards. An important element would be also to investigate the region in terms of demand for specific training as well as assistance and to inform companies about training financing potential [11].

Practice shows that an adequately performed training will make it possible for a graduate to enter the job market more easily, speed up settling-in in the future job. Besides, a well-organized practical training can also result in the best students being offered a job in the same job they received professional training. Schools of higher education launch cooperation with employers, which takes various forms of activity: providing classes, especially in practical majors, acting as experts in various groups of the school of higher education of professional training and internship tutors. Cooperation is also expected in formulating the opinions of employers in terms of evaluation of the educational outcomes received or a participation in joint research projects. However, schools of higher education face problems with acquiring employers for cooperation as part of student professional training and their period is frequently insufficient [3].

A high level of professional training combined with a high student education level can enhance its competitiveness also with graduates of other schools of higher education. Student professional training should also be evaluated to include the student, the school of higher education and the practical training provider. Such a well-performed evaluation will facilitate a regular enhancement of the training level, training programs and the assumed outcomes. The method can also evaluate the syllabus. Such monitoring can result in creating a good training bank and, as for the organizations providing student training, the school of higher education can certify the best ones, which will ensure high training standards.

As part of the comparative analysis, student training was evaluated at seven faculties of the University in the 2015/2016 academic year. As for a few research areas evaluated, the benchmarking method was applied, based on the agreed criteria. To solve the research problem, a few research methods were used. At the first research stage a thorough analysis of internal documents made available by
the Department of Education and Student Affairs was made in terms of training organisation and regulations principles evaluation.

The Education Quality Policy of the UTP University of Science and Technology in Bydgoszcz complies with the Mission and priorities in the operation of the University and it constitutes an obligation to students, the academic community and the society [9].

The research covered all the University faculties, namely:

- Faculty of Construction, Architecture and Environmental Engineering (WBAiIS)
- Faculty of Hygiene and Animal Biology (WHiBZ)
- Faculty of Mechanical Engineering (WIM)
- Faculty of Agriculture and Biotechnology (WRiB)
- Faculty of Chemical Technology and Engineering (WTiICh)
- Faculty of Telecommunications, Computer Science and Electrical Engineering (WTiIE)
- Faculty of Management (WZ).

As part of the research process, a thorough analysis was performed; it covered the professional training organization principles in terms of: organizational structure, number of hours of classes allocated to academic teachers acting as professional training tutors, the number of employees involved in training organization at respective Faculties, as well as the number of students attributed to each of them.

Due to the research scope and topic, training data and information available on faculty websites was reviewed.

The analysis covered e.g. the scope of availability and practical applicability of the information provided there to students and employers. First the study focused on an easy access to such contents in terms of reader-friendliness and simplicity of the structure of tabs and hyperlinks. The next step involved a thorough analysis of the information files, documents to be downloaded, essential for the training organization and execution and any other additional contents and information. The study was performed twice. The first date coincided with the end of the 2015/2016 academic year, and the report from the analysis was forwarded to all the chairpersons of the Faculty Teams for Education Quality. The report indicated that, next to conclusions, a repair process is recommended. The study was repeated at the end of the winter semester of the 2016/2017 academic year, with a special attention to the current status and the evolution of the area under study.

2 PROFESSIONAL TRAINING ORGANIZATION PRINCIPLES IN THE EDUCATION PROCESS

During the education process the student should acquire practical knowledge and skills of e.g. using that knowledge to solve the practical problems or to cooperate in the team. An important element of the training is also developing social competencies;

- individual and team working skills, including time management and contracting obligations and meeting the deadlines,
- awareness of own social role, an active participation in social activities,
- creative team cooperation skills,
- awareness of the importance of the idea of dialogue in social life,
- openness to various methods of argumentation of views and standings,
- creativeness in terms of searching and selecting the sources of information for the purpose of organization management.

Educational outcomes are also verified through professional training. The principles of professional training organization are determined by the provisions of the Programme Regulations [5]. Besides, the so-called Detailed Elements of the Internal Educational Quality Assurance System contained in the current Resolution of the Senate indicate that the responsibility of the Programme Council is to be attentive to a high education process quality by supervising the adequate student training. It mostly refers to defining the training purpose and the predefined educational outcomes as well as the training
time for a specific major, level and major of the level and profile of the course in companies, institutions and other places of employment. For each major, level, and education profile the Council of the Faculty determines the requirements which include, next to exams, oral and written intermediate exams, transitional papers, intermediate and other tests, also professional training [10]. A minimum training time depends on the education profile. In B.A. and B.Sc. general-academic profile courses, the training should take at least 4 weeks, while in practical-profile courses – it varies; from 6 weeks in B.A. courses and 8 weeks in B.Sc. courses. In practical-profile courses it is also possible to receive a semester training. It is important for the education program to consider a diploma paper/project execution in the organization where training is received. The practical-profile course program can also offer other education forms, e.g. internships, volunteer work and projects the topic of which is related to the problems in the work environment typical for the graduate in a given major.

The elements of the quality system operating at the UTP do not consider, however, a practical training evaluation. Neither do they assure feedback from students and employers. Yet one should note that the faculties hold meetings with employers to receive opinions on the expectations of potential employers in terms of qualifications and practical skills of the graduate as part of the majors offered. As an example one can consider the organization of one of the latest meetings in 2016 at the Faculty of Management in which experts, including representatives of the biggest companies in the city of Bydgoszcz and the region, headmasters and the academic community participated. The participants of the panel discussions stressed that in industrial production it is necessary to develop the graduates' both managerial and engineering competencies. The key skills of the student, and a future employee, as it was highlighted, are practical skills, however acquired not only in a course of studies but also while working in the company, and earlier throughout various internships and professional training.

Introducing the practical profile will allow, according to the employers, for a better preparation and accomplishment of the pre-defined educational outcomes, especially social skills and competencies in technical and economics-and-social sciences. A positive element of the change will be a possibility of a practical verification of the graduates' competencies and predispositions to a given profession. Verifying the graduates' knowledge, skills and theoretical image with practical actions while learning in the field, professional training in companies, etc. will be an additional advantage enhancing their professional applicability [12].

An involvement of the business community and lecturers with practical experience in the practical education process as well as a higher number of classes in the field and project work guarantee an effective execution of the predetermined educational outcomes.

The practical profile which considers professional training in the course program will ensure, to much extent, getting to know new production techniques and technologies, procedures and processes which are not always available during the course.

3 EVALUATION STUDY RESULTS

The research has shown mostly a very high variation in the professional training organizational structure, which can be due to the specificity of the majors (Table 1). Teaching and tutoring is supervised, in a given scope, by the Deputy Dean for Student Affairs and Teaching, the Faculty Coordinator for student training. At five out of seven faculties the position of the Dean's Proxy for Student Training was created; in one case (WIM) it is a single-person position with no other employees being subordinated to it and, in another case (WTiE) – the training organization is dealt with by four Dean's Proxies, with no other employees being subordinated to it. A slightly more complex organizational structure has been introduced at WBAiIS where 14 group tutors are subordinated to the Dean's Proxy. At two faculties (WRiB and WZ) a three-level organizational structure has been introduced; the major tutors (4 and 2 tutors, respectively) are subordinated to the Dean's Proxy, whereas group tutors are 14 and 6, respectively. A very simple organizational structure operates at two faculties; WhIBZ, where all the work related to student training organization and execution is dealt with by 4 student training tutors and WtiICH – by 4 major tutors.

Thus, depending on the Faculty, a number of employees responsible for professional training organization and execution ranges from 1 to 19.
A high variation also concerns the number of classes involved in working in the student training organizational structures; the lowest (on average about 10) refers to three faculties: WBAiS, WTiICh and WTiIIE. The highest average number of classes (52.2) per employee involved in the professional training organization is recorded at WZ. Similarly, respective faculties noted also varied numbers of students per employee. The lowest number of students, 12-17 and 15-17, respectively, is found at two faculties: WRiB and WZ. Definitely most students per employee (33-136) are reported at WTiIIE. The study has demonstrated an immediate relationship between the organizational student training structure complexity level and the number of students per employee; the lower the complexity level, the higher the student number. With a high number of students, the professional training organization and execution process can be inadequate and it is what should call for at least two-level organisational structures operating at the faculty.

The study has indicated that the training daily log, provided to each student receiving training, must be kept on regular basis, in a form of weekly entries for the activities performed during training, approved by a legible stamp affixed by the organization and the signature of the organization's training tutor or a representative of the company providing student training. It turns out, however, that the training daily log has been operating at the University in an almost unchanged form for a few dozen years. Attentiveness to a high education quality thus requires taking actions to update that document and adjust it to current standards corresponding to the major. Besides, to ensure students' highest security level during training, a thorough analysis of the contractual student training obligations is necessary. It would be recommended to develop a professional training evaluation survey questionnaire in terms of accomplishing the educational outcomes, training place and the tutor.

An analysis of website student training information and documents available was performed for all the University faculties.

### Table 1. Professional training organization at respective faculties at the UTP

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Organizational structure</th>
<th>Number of employees</th>
<th>Number of the hours of classes per employee</th>
<th>Number of students per employee</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Function</td>
<td></td>
<td>According to the position held</td>
<td>On average</td>
</tr>
<tr>
<td>WBAiS</td>
<td>Dean's Proxy for Student Training</td>
<td>1</td>
<td>60</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Group tutor</td>
<td>14</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>WHiBZ</td>
<td>Professional training tutor</td>
<td>4</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>WIM</td>
<td>Dean's Proxy for Student Training</td>
<td>1</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>WRiB</td>
<td>Dean's Proxy for Student Training</td>
<td>1</td>
<td>60</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>Major tutor</td>
<td>4</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Group tutor</td>
<td>14</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>WTiICh</td>
<td>Major tutor</td>
<td>4</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>WTiIIE</td>
<td>Dean's Proxy for Student Training</td>
<td>4</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>WZ</td>
<td>Dean's Proxy for Student Training</td>
<td>1</td>
<td>120</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>Major tutor</td>
<td>2</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Group tutor</td>
<td>6</td>
<td>23</td>
<td></td>
</tr>
</tbody>
</table>

Source: authors' own study
The first analysis of websites, made at the end of 2015/2016 academic year, demonstrated that an easy access to professional training contents was available for seven faculties, and a more complex access – one faculty (WHiBZ). Interestingly, the access offered by respective faculties was homogeneous, through the tab “STUDENTS/STUDIES”, which helps navigation considerably. A repeated study showed that all the faculties applied the same access to the professional training data, however, in a single case the access is still difficult due to an excessive complexity and a low variation in terms of field grading of the menu of the tab “STUDENTS” (WBAiIS).

The access unification, unfortunately, does not mean homogeneous contents; the first analysis revealed that the professional training regulations were made available by six out of seven faculties; the WHiBZ website provided no such regulations. Unfortunately, a repeated analysis of websites and professions training did not show any changes in that case.

Training dates and time at respective majors and in successive semesters were also considered; it was indicated that in both studies the training schedule was available on websites of 4 faculties: WIM, WRiB, WTiiE and WZ.

The availability of the training time on website, next to the four faculties above in both periods, was also reported for WBAiIS. Another problem is often posed by a lack of information on training tutors; such data was available on the website of four faculties: WRiB, WTilCh, WTiiE and WZ, with only one website (WZ) providing contact details. To their advantage, all the faculties in professional training tabs were provided with training framework programs.

Interestingly, for the students the specific proposals of organizations offering training are definitely essential. Unfortunately no such information was available on the website of each faculty; in the first study it was available on the websites of two faculties: WRiB and WZ, and in the repeated study – it was found that such information was provided on the WTilCh website.

Another very important issue are attachments and documents to be downloaded from the tab “TRAINING”. They are available in most of the websites analysed (the attachments are missing on the WHiBZ website), however they are not described in a clear manner and so searching for a specific document is very time-consuming as one has to open and check various attachments. Only two faculties (WRiB and WZ) offer transparent and reader-friendly attachment descriptions.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Faculties satisfying the criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>September 2016</td>
</tr>
<tr>
<td>Easy access</td>
<td>6</td>
</tr>
<tr>
<td>Training regulations</td>
<td>6</td>
</tr>
<tr>
<td>Framework programs for specific majors</td>
<td>7</td>
</tr>
<tr>
<td>Training dates</td>
<td>4</td>
</tr>
<tr>
<td>Training time</td>
<td>5</td>
</tr>
<tr>
<td>Training tutors</td>
<td>4</td>
</tr>
<tr>
<td>Tutors’ contact details</td>
<td>1</td>
</tr>
<tr>
<td>Proposals of organizations offering training</td>
<td>2</td>
</tr>
<tr>
<td>Transparent attachments descriptions</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: authors' own study

4 CONCLUSIONS

The study performed at all the faculties of the UTP University of Science and Technology has demonstrated a high variation in the organizational structures of professional training. Even though an individual adjustment of the organizational structure of professional training to the specific nature of the studies at each faculty is most welcome, some concern can be triggered by a frequently excessive
number of students per tutor and a low number of academic teachers involved in the training organization process, which can have a negative effect on the valuation of educational outcomes accomplished during training. Implementing research tools which would facilitate the evaluation of professional training from the student's and employer's point of view is indispensable.

It is recommended to decrease the number of students per teacher acting as a training tutor as well as to adjust the structures to specific majors. Missing website information updates must be immediately provided. Launching practical-profile courses requires a variation in the principles of training organization as compared with the general academic majors offered. Besides, it is also necessary to increase an active participation of employers, e.g. in the process of verifying the educational outcomes.

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