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Bieńkowska A., Ludwikowska K., Tworek K., Walecka-Jankowska K.: Competences Necessary in the Work of HEI Academic Teachers – Shaping the Pedagogical skills Profile	1
Dongre A. P.: Thinking-Skills for Excellence in Higher Education	13
Barska A.: Consumers and the Innovative Activity of Food Processing Companies in Poland	18
Acharya F., Makwana K.: Assessment for Learning and of Learning to Achieve Course Outcomes in Mathematics for B. Pharm Students in Parul University	28
Jędrzejczak-Gas J.: Depreciation Capital in Financing Real Investments of Companies – Balance Sheet Law and Tax Law Regulations	33
Mavani V.: Customised ESL Software Assisted Second Language Acquisition: a Quantitative Report	41
Nathwani V., Anjariya N.: Use of Hot Potatoes Software for Language Teaching	47

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- Customised ESL Software Assisted Second Language Acquisition: a Quantitative Report by Vaishalee Mavani;
- Use of Hot Potatoes Software for Language Teaching by Vaishali Nathwani and Nainita Anjariya;
- Thinking-Skills for Excellence in Higher Education by Anil P. Dongre;
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The central objective of the project is to strengthen the capacity and quality of teaching at partner higher education institutions in India by the establishment of Capacity Building Centers (CBC) at five Indian universities.



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Competences Necessary in the Work of HEI Academic Teachers – Shaping the Pedagogical Skills Profile

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Abstract

The article considers a topic of pedagogical skills needed in HEI. The main aim of the paper is to present comprehensive set of competences necessary in the work of an academic teachers from HEI (Higher Education Institutions) and measurement method allowing for the assessment of academic teachers' skills in order to identify fields for further self-development. Based on a review of literature and experience, 4 groups of key skills for the work of an academic teacher were selected: personal development skills, leadership skills, communication skills and teaching skills. The methodology of measurement of selected skills is presented and based on assessing two factors: abilities and attitudes of respondents. Abilities are tested using questions "I am able to do something (or I am doing something)" and attitudes are tested using questions "I understand that something is important in academic teacher's work". Those are especially important for assessing personal development. The basis for personal development should be the belief that the elements are important in the work of an academic teacher. Identified skills and proposed measurement method were the basis for formulation of Pedagogical competency assessment survey used as a part of CABCIN project cofounded by European Union.

Key words: *management, competences, pedagogical skills, HEI*

1. Introduction

Nowadays, the problem of determining the premises (conditions) of effective and efficient employee operation should be associated with the notion of competence [Bieńkowska, Broł, 2011]. It primarily refers to the assessment of the extent to which employees "... are able to use their knowledge, skills and personality traits to achieve the goals and standards assigned to their roles ..." [Armstrong, 2001, p. 241]. This means that based on the analysis of people's behaviour in the past, conclusions and assumptions about the key predispositions that employees should have to perform specific types of tasks, fulfil organizational roles and / or achieve goals [Bieńkowska, Broł, 2011] can be drawn (currently and in the future). The term competence is understood as a set of knowledge, skills and characteristics that allow for effective realization of tasks and effective achievement of goals in a given position in the context of adopted strategic goals of the organization. Such composition of knowledge, skills and personal characteristics can be defined as competence profile required for

effective task realization on a job position. The competences defined in this way may be referred to both the job position and the person performing the job (including the candidate for work) [Bieńkowska, Brol, 2011]. The issue of competence and management of this category is also of special importance in Higher Education Institutions (HEIs). On the one hand, as Trigwell et al. [1999] is stating, an academic teacher's approach to teaching is related directly to the students' approach to study: teachers focused on students and having a full skillset needed in HEI are more likely to convince students to take a deep approach (attempting to make sense of content) rather than a surface approach (attempting to remember content), which is one of the biggest challenges of nowadays teaching experience [Gibbs, Coffey, 2004]. Developing competency model/profile is the important tool for the teaching activity, which supports designing teacher education.

Therefore, the article refers in particular to the pedagogical skills as an element of competence profile. It is assumed that skills are related to the action and are defined as the capability to apply knowledge to complete the task [McClelland, 1973]. In this context the main purpose of the article is the identification of key pedagogical skills needed in the work of academic teachers – employees of HEIs.

2. HEIs teachers' competences – taxonomy approach

The teacher's professional competence is broadly discussed in the literature [among others Ryegård et. al. 2010, Appelgren, Giertz 2010, European Commission 2005, Taraszkiwicz, 2001, Strykowski, 2003, Kwaśnica 2003, Denek 2000, Rodzeviciute 2010]. Described approaches focus mostly on discussing the classifications and characteristics of competence groups that a modern teacher should have. Groups of pedagogical competences are presented in Tab. 1.

Tab. 1. Pedagogical competences [source: own work]

Author(s)	Competences: knowledge, skills, characteristics
Ryegård, Appelgren, Olsson 2010	supporting/stimulating student's learning skills in organizing the didactic process advanced pedagogical knowledge psychology of education conscious use knowledge
Appelgren, Giertz 2010	stimulating student's learning scientific approach the use of teaching skills holistic view knowledge of the objectives and organization of education knowledge about teaching knowledge of how students learn ability to improve, develop documentation and present knowledge knowledge about the goals and organization of education striving for continuous improvement management and organizational skills
European Commission 2005	work in a multicultural classroom work on a regular basis with new products and technology teamwork constant knowledge development and personal development critical information processing
Strykowski 2003	substantive competences psychological and pedagogical diagnostic competence connected with getting to know students and their environment competences in the field of planning and design

	<p>didactic and methodological competences</p> <p>communication</p> <p>media and technical competencies related to control and assessment of students' achievements and qualitative school measurement</p> <p>competences regarding designing and evaluation of programs and textbooks</p> <p>schools</p> <p>auto-education competencies connecting with professional development</p>
Kwaśnica 2003	<p>separates two groups of competences (first group determines use of the second group)</p> <p>The first group consists of practical and moral competences, which include:</p> <ul style="list-style-type: none"> • interpretation competences, i.e. the ability to understand referring to the world • moral competences, understood as the ability to moral reflection • communication skills, or the ability to be in dialogue <p>The second group is technical competence, which consists of:</p> <ul style="list-style-type: none"> • postulation competences, treated as the ability to advocate for • instrumental goals and identifying with them • methodological competence • implementation competences, understood as the ability to select means and create conditions conducive to achieving goals
Taraszkiewicz 2001	<p>three groups of competences:</p> <p>substantive</p> <p>didactic-methodical</p> <p>educational</p>
Denek 2000	<p>praxeological</p> <p>creative</p> <p>moral</p> <p>information and media cooperation</p> <p>communication</p>
Rodzeviciute 2010	<p>cognitive competence</p> <p>information technology competence</p> <p>methodological competence</p> <p>planning competence</p> <p>organizational competence</p> <p>leadership competence</p> <p>motivational competence</p> <p>assessment competence</p> <p>communicative competence</p> <p>expressive competence</p> <p>lifelong learning competence</p> <p>project management competence</p> <p>additional education organization competence</p> <p>social competence</p>

On the basis of the above-mentioned examples of competence classification, it can be noticed that, speaking about the knowledge, experience and features of modern academic teachers, this issue is presented at a wide and different level of detail - alternating (even within one classification) large groups of competences with specific skills necessary in academic work. Moreover, these classifications contain competences from all three groups: knowledge, experience and personality traits of HEI employees. Referring to the substantive content of the presented classifications, it should be emphasized based on Suciú et al. [2011: 419] that “contemporary views on the process of education through focus on the development of pedagogical competences do not refer strictly to methodological and assessment competences as this process has to be viewed in all its aspects so as to attain genuine efficiency and to form learners not only as knowledgeable individuals in the field but also capable to integrate in various sectors of the labour market and organize their activity and develop top to bottom projects”.

In this context, this study considers skills as most important (or capability to apply knowledge), recognizing as McClelland (1973) their specific role for completing the task. Following the literature review and analysis of standards for teacher practice the authors recognized four domains of teacher skills, which will be discussed in this paper:

- specialist teaching,
- communication skills,
- leadership skills,
- skills connected with personal development.

The group of competences were selected in view of HEIs and strategic tasks that teachers need to perform efficiently. The skills were utilized through different steps, such as the identification of the teacher performance metrics, defining tasks and performance indicators, analysing teaching process and identification of critical functions, analysing available documents of teacher education programs. Finally, the skills were divided into groups representing job characteristics of teacher profession.

They are all important and can be considered as factors directly building students teaching experience and are a sort of an expansion of certain especially important areas identified in the specialist teaching skills group. Ramsden [2003, p. 25] is defining teaching as a broad notion, which includes: „aims of a course, the methods of presenting the knowledge those aims embody, assessing students' achievement and evaluating the effectiveness of the whole process.” He suggests that the main and most important skills of a teacher are specialist teaching skills and they are always at the center of a teacher work. Therefore, specialist teaching skills is the first and most important group of skills needed for higher education teacher [Nilson, 2010]. As Herbert Khol stated, „no one starts out teaching well” and it seems that mastering this particular group of skills is at most importance for every teacher. Moreover, HEI's environment (economic, social, cultural) is dynamic, thereby HEI are constantly and rapidly changing. In order not to be left behind, academic teachers must create an environment that will be conducive to learning and development. Therefore, leadership skills are necessary – teachers must formulate and achieve goals, manage group and individuals work, which is extremely difficult. At the same time, HEIs employees are responsible for shaping students' attitudes and behaviours and for providing them with a specific set of competences necessary from labour market perspective. Developing skills and working on attitudes require efficient communication, which is based on trust, respect and honesty. Moreover, communication increases organizational performance, because teachers are able to create environment where students can feel more passionate about their studies and exhibit attitudes and behaviours. Furthermore, as Kapias and Polok [2007] noticed, academic teachers should transfer knowledge in a reliable, responsible, honest and diligent manner, i.e. speaking only in the area of their professional competences, preparing for classes using the proper (latest and most significant) literature and scientific achievements, taking care of the quality of classes (subjecting their evaluation and improving the didactic workshop), admitting mistakes made, recognizing the inadequacy of own ideas, intakes, wording. Therefore, personal development is very important in HEI.

Moreover, developed competency model can be used to evaluate the competence gap by comparing the present perceived ability level of teacher and the required of the teacher position. The results can be used to set up the individual development plan. The competence model proposed in this paper is based on the evaluation of available teaching frameworks from the literature, observation and learning patterns of experts.

2.1 Specialist teaching skills

Specialist teaching skills allow to perform all tasks necessary to teach. Two most important aspects of achieving aims, which are assigned to an academic teacher, are: choosing and using right teaching methods and managing courses and students. Nilson [2010] is underlining that the key aspect in building specialist teaching skills is understanding how and why students learn and incorporating it into those two aspects. Hence, the main groups of skills included in the group of specialist teaching skills are those connected with:

- course management
- teaching methods
- instructional technology teaching methods
- questioning techniques
- designing assignments
- accommodating different learning styles
- designing assessments
- grading skills
- improving quality of course
- office hours use

Skills connected to course management can be understood as the ability properly prepare, perform and finalize the given course. In the line of academic teacher work, there are different approaches to managing courses. Sometimes teachers are given only a main topic of a course, sometimes teaching methods or course content are imposed. Therefore, academic teachers need to master the ability to prepare a course plan, choose appropriate teaching methods to achieve the goals of this plan, prepare appropriate evaluation tools and complete the plan in a given amount of time. These are the main tasks in an academic teachers' work. Moreover, nowadays a use of Information and Communication Technologies (ICT) is growing in an academic community [Tworek, 2018; Quellmalz and Kozma, 2003] and the ability to use them to manage a course and communicate with students on a daily basis is also becoming one of the key skills of 21st century academic teacher.

There is a variety of teaching methods available to choose from in order to fulfil the goals of a given course. Therefore, the skills concerning its proper selection and use are of particular importance in this line of work. Lecture as a form of knowledge sharing and teaching is still a basic teaching method at most Universities. However, new forms of courses are becoming more and more present. Especially those, which allow for more direct communication and thoughts exchange with a student. Therefore, the ability to integrate modern teaching methods (case studies, simulations, trigger materials etc.) into the course plan and use them wisely seems important in securing students ability to gain knowledge. Teaching methods are directly connected with instructional teaching methods [Nilson, 2010]. Those, as stated before, are becoming increasingly connected with the use of ICT. Therefore, academic teacher needs to be able to use ICT not only for course management, but also (and even more importantly) to incorporate modern, IT – based instructional teaching methods, such as web-based materials, shared team-work, ubiquitous boards.

Another important aspect of teaching is connected with the ability to design assignments and assessments for students (including proper use of questioning techniques). There is a variety of assignments types to choose from (from quizzes to writing assignments) and a proper selection of them to incorporate into chosen teaching methods is not that easy, especially keeping in mind that they need to be chosen to help students learn a specific portion of a material. Designing assessments is even harder [Nilson, 2010; Ramsden, 2003] because of the need to prepare them at the level appropriate for the knowledge shared with students during the planned course. There is also a possibility, and at some Universities even a necessity, to prepare them using ICT [Quellmalz, and Kozma, 2003], which creates additional problems for many academic teachers and is a new skill, which needs to be mastered.

Finally, academic teachers need to be able to communicate efficiently with the students (which is a set of skills presented in the next section of the paper) using various methods. On the one hand, this communication is aimed, among others, at improving course and teaching quality based on the feedback, which is given by the students. On the other, it is aimed at improving their learning experience and allowing them to learn through direct contact with a teacher, e.g. during the office hours. Therefore, it is important to remember that proposed four groups of skills are not closed and all of the analysed skills are connected with each other.

2.2 Communication

The continue nature of contemporary change in HEIs highlights for teachers the need to develop competences to create learning environment. Therefore, the other group of skills identified for this study is the ability to communicate. In organizational context this set of competences includes social relations with others, which aims to connect employees, foster improvement, change behaviour and facilitate change. Effective communication shapes interpersonal relationships.

Zlatic L. et al. [2014] defines communication competence of teachers in terms of their knowledge, skills, abilities, motivational dispositions, and attitudes. It is considered as teacher's ability to choose suitable behaviour to achieve aim of social interaction. Communication skills are viewed as vital for improving student learning and raising teachers' effectiveness in all segments of the teaching process. A student-centred approach requires from teachers to create an environment through communication where students can feel more passionate about their studies and exhibit attitudes and behaviours necessary for improved organizational performance. If students perceive teacher as supportive, they are more willing to return this support as favourable attitudes and engagement in extra-role behaviours that promotes their performance.

In the current study communication skills consists of following group of competences:

- multicultural communication
- empathy and patience
- use of collaborative dialogue and strategies
- adaptive communication
- building communication with audience
- express understanding
- written communication
- presentation skills
- giving feedback
- check for understanding

Multicultural communication is defined by Spitzberg and Changnon [2009] as the ability of competent people to adapt their verbal and nonverbal messages to the cultural context, in which they are teaching. It is related to general ability of understanding and respecting students from different background. It refers also to adjusting teaching modes to students from different backgrounds, using technology and digital resources to learn about diverse cultures and to engage in appropriate social action. Multicultural communication refers also to self-awareness of own biases and behaviours to avoid stereotypical actions or responses. It is related to taking actions to increase diversity in the workplace, confront racist, sexist, or inappropriate behaviour by others, challenges exclusionary organizational practices. Teachers also need to have knowledge about the other with whom they communicate and be sensitive to cultural factors that can affect communication [Wiesman, 2002]. Ludwikowska [2017] added awareness of other cultures and openness and acceptance of different ideas and views as multicultural skills important for academic teachers.

The components included in second group of skills, named empathy and patience, are related to using communication tools to support communication, such as speaking slowly and in relatively simple sentences, allowing for comprehension pauses, using questions, paraphrase, or visual restatements to check if messages have been understood.

The skills labelled as using collaborative dialogue and strategies, refer to verbal aspects of communication. It outlines that teachers are required to use responses, questions, articulate reasons behind responses or statements, check understanding of words, sentences and concepts and use teaching strategies for improving understanding of these if necessary.

Verbal aspects of communication are also included in the group of skills in terms of building communication with audience. Teacher needs to be able to stress major points and follow a logical sequence of presentation, keep the audience engaged through use of techniques such as analogies, illustrations, humour, an appealing style, body language, and voice inflection. Teacher should know

how to frame message in line with audience experience, background, and expectations to enhance understanding, use terms, examples, and analogies that are meaningful to the audience.

Building communication with audience can be enhanced through developing presentation skills. These skills include ability to prepare and present materials for audience. For this purpose written communication should be developed and include preparing manuals, keeping accurate written documentation, putting technical information into simple terms, preparing written instructions or summaries. Teacher's ability to provide clear presentation structure is a contributing factor to effective teaching and, in turn student learning [Hall et al., 2011; Maulana, R. et al. 2017].

Adaptive communication describes how teachers use vocal cues that signal listening attentiveness and indicate affirmation and listening to relational meaning of messages, how do they address conflicts to the whole group and accept longer turn-taking or pauses. Effective teaching requires that teachers recognize characteristics of students and their learning needs [Maulana, R. et al. 2017]. This implies that teachers need to adapt their teaching to various characteristics in the class.

Listening skills are also part of two competences named expressing understanding in order to correctly interpret messages and respond appropriately, and checking understanding. Techniques such as asking clear questions, providing clear instruction and communicating complex ideas clearly and logically could be used. These skills refer to communicating information effectively by telephone, videoconferencing, or other devices thus using appropriate nonverbal communication (eye contact, gestures, posture) when communicating with others. To check understanding teacher should be able to make students explaining their thinking, ask them to identify their misunderstandings, assess their understanding of conveyed message [Maulana, R. et al. 2017]. Listening skills should be reflected in ability to give feedback.

2.3 Leadership

Dynamic economic, social and cultural changes, as well as technical progress (also in the area of access to information) is causing correct formulation and effective achievement of goals to be extremely difficult in modern organizations. One of the elements having a direct impact on the development, as well as implementation of the vision, strategy and indicating the directions of the organization's operation is leadership understood as a process focused on shaping or influencing people to obtain organizational goals. The process is based on exerting influence, without resorting to coercion, with the intention of shaping the objectives of the group or the entire organization and motivating behaviours aimed at achieving organizational goals [Griffin, 2004]. It is therefore hardly surprising that leadership plays a special role in today's organization.

Social, economic and cultural changes also affect transformations in HEIs. Modern HEI combines the functions of a creator, initiator and knowledge leader, wanting to overtake and co-create the surrounding, dynamic reality. At the same time, HEIs employees are responsible for shaping the right attitudes and behaviours of students and for providing them with a specific set of competences that will allow them to find themselves in the labour market and to co-create a knowledge society in the future.

In HEIs, leadership (called also academic leadership, university leadership, educational leadership) affects the achievement of goals [e.g. Bolden et al., 2008; Sathye, 2004; Bryman 2007] and determines the efficiency of these organizations [Marzano et al., 2005]. Therefore, both the theory and the practice of leadership in HEIs are nowadays facing important challenges. Its essence is to set a vision and then the strategy and objectives of the HEI as a whole and - on this basis - to set tasks at every level of its functioning, as well as focus on development and learning, sharing responsibility, management and organization of group work, appreciation and use of diversity, and all that taking into account the context of the HEI's functioning. Academic leadership is a function of several characteristics: strategic vision and networking, collaborative and motivational leadership, fair and efficient management, development and recognition of performance and interpersonal skills

[Ramsden, 1998]. Leadership in HEIs is concerning both leadership in teaching as well as leadership in research [Ramsden, 1998].

In this context there is no doubt that the skills of employees (academic teachers) of HEIs in the area of leadership are key and directly affect the achievement of the goals of these organizations. They are so-called holistic representation of pedagogical skills [Rodzeviciute, 2010], i.e. „the ability of an individual to use a coordinated, synergistic combination of tangible and intangible resources to achieve efficiency and/or effectiveness in pedagogy” [Madhavaram, Leverie, p. 5]. The main groups of skills in the field of leadership are:

- ability to create directions, set goals and define tasks,
- decisiveness,
- adaptability,
- managing / organizing group work / motivating group members,
- building relationships in a group.

Efficient creation of directions, setting goals and defining tasks requires possession of ability to observe and analyse as well as to identify future trends in the environment. On this basis, it is possible and necessary to formulate (thinking in strategic terms) a vision of the future and set directions of actions as well as long-term goals, hence the ability in that scope is necessary to the academic teacher. Moreover, efficient leadership requires the ability to postpone the long-term goals for medium-term plans and to divide the goals into tasks performed by group members as well as to coordinate, organize and set priorities for the members of the group for achieving good results of the group. Efficient leader should also be able to measure the degree of goals' achievement, perform periodic assessments of the degree of goals' achievement and discuss progress towards goals and review performance, and – if it's necessary - to plan corrective and / or preventive actions to achieve goals.

In addition, it is extremely important, especially in the conditions of dynamically changing environment, that academic teachers are able to make decisions, also under conditions of stress and time deficit. In particular, they should have ability to collect and integrate information from variety of sources, include others in the decision-making process (as warranted to obtain good information and make the most appropriate decision), and designate clear decision criteria to make proper decisions based on available information. Moreover academic teacher needs to be able to analyse the consequences of the decisions taken and to draw conclusions based on the analysis of the consequences of the decisions, as well as to take risks and responsibility for decisions. Unfortunately, not all employees can take responsibility for decisions primarily because of fear of consequences of poorly implemented activities.

Adaptability is an ability to react quickly to changes and be flexible in adapting to changes in the environment, to act or generate alternative solutions to resolve problems or situations and – if necessary - to correct actions and activities. Adaptability is indispensable in the contemporary conditions of economic, social and cultural transformations as well as technical progress.

Skills connected to managing, organizing group work and motivating group members can be understood as the ability to explain the direction of the action and its meaning to the group, clearly communicate expectations to group members and to influence the group to accept the adopted vision and strategy. Moreover, it is important to be able to divide the roles among group members keeping the roles and responsibilities clear and to delegate decision-making powers according to the needs and competences of group members (and of course respect the areas of decision making that have been delegated). After that, it is necessary to monitor group activities to ensure that roles and responsibilities of group members are clear. Efficient leader should have the ability to accurately assess the competence of the group members (including their strengths and weaknesses) and to use individual values and differences and talents. Especially in a changing environment, it is possible for disturbances to occur during the implementation of the assumed goals, it is expected that the leader will be able to communicate changes or problems to group members, motivate members of the group to risk-taking and work for solutions and trigger the energy of people to overcome the emerging

barriers. He should be able to fully coordinate others in team decisions and actions and influence the involvement of group members.

In the end, building relationships in a group requires proactive leadership. Leader should be able to actively listen and objectively consider others' ideas, opinions, suggestions and comments, even when they conflict with his own. Moreover, it's important to understand that it is important to have authority in a group, and that group involvement is important in group matters (leader should be able to persuade individual members of the group to not achieve their performance at the expense of other group members).

2.4 Personal development

HEI is a school of characters, shaping attitudes, tolerance, respect for different views, values and cultures. Moreover, HEIs should aim at shaping young people's developed personalities while respecting their autonomy. It is more than educating, it is also upbringing (HEIs creates not only adults, but above all – mature people). A sign of high education is, among others, non-resonance of the will of others, own opinions, lack of susceptibility to all kinds of trends [Denek 2012]. It means also that academic teacher is respecting the dignity, subjectivity and autonomy of students, respecting their right to freely express their opinions on important issues (i.e. on scientific matters), while encouraging (requiring) reliable argumentation [Kapias, Polok 2007].

Academic teachers should be cultural, moral and educational models. It means that academic teacher should be a competent and kind guide, a fair evaluator and an impartial interpreter. It is very important role to broaden students' horizons, encourage creative thinking, presenting own thoughts and defending them, inspire to self-development. As Szkolak [2014] noticed in order for an academic teacher to develop a mature student personality, must have an exceptional personality, the ability to open new development perspectives to students, the ability to show values and sensitise the listener to them. Therefore, he must have high spiritual, moral and intellectual qualifications to be a model for another human being [Szkolak 2014]. Academic teachers should transfer knowledge in a reliable, responsible, honest and diligent manner, i.e. speaking only in the area of their professional competences, preparing for classes using the proper (latest and most significant) literature and scientific achievements, taking care of the quality of classes (subjecting their evaluation and improving the didactic workshop), admitting mistakes made, recognizing the inadequacy of own ideas, intakes, wording [Kapias, Polok 2007]. An academic teacher should also be characterized by the courage to present his own rights regardless of the circumstances and the consistency. He must be a tactful man, unstable, having the courage to react to manifestations of evil and injustice. This integrity of character is shaped by honesty, loyalty, tolerance, courage in presenting one's own views and consistency [Szkolak 2014].

Respect for freedom is also related to the level of trust between people (relationships between an academic teacher and students, and between colleagues, co-workers), which has a great impact on capability of creating knowledge and learning [Walecka-Jankowska 2013]. Atmosphere of trust means that academic teacher is trying to partner young people, treats them as adults, allow for discussion [Śnieżyński]. Co-operation requires breaking the barrier of position (degree, title) and creates an atmosphere of security, combines with a warm attitude to students, and thus has a positive effect on their attitude towards learning. It also means that academic teacher should friendly inspire students: stimulating their inclination to independent development and fostering scientific inquiries, critical thinking (i.e. by sharing discoveries and doubts), care to improve cognitive skills and knowledge transfer [Kapias, Polok 2007]. Having sense of humour is a special advantage, because working with young people requires time for a joke and a smile. A teacher who creates a positive atmosphere around himself is able to achieve a lot more and the cheerful face can effectively relieve tension and stress (Szkolak 2014). Moreover, academic teacher should have experience in managing own fate, to be aware of responsibility for further, professional development [Grochulska 2000].

As it can be noticed – being academic teacher is not always about knowledge or skills but also about attitudes and values. That's the reason personal development part of questions concerned

attitudes towards various elements (based on list of values proposed by [Ciczkowski 1996]). Elements were divided into groups of items:

- perfectionist aspirations,
- open-minded attitude,
- internal discipline,
- tolerance,
- activity,
- civil courage,
- intellectual honesty,
- responsibility,
- socialization,
- aesthetic sensitivity and sense of humour.

Perfectionist aspirations mean that academic teacher is thinking and designing perspective of own scientific development. Those decisions are made based on self-involvement, making moral choices but also initiative and optimism. Open-minded attitude is visible in openness to new theories, concepts, knowledge, different opinions and readiness to change the scope and direction of research. Moreover it means that academic teacher has ability to integrate knowledge from various disciplines, scientific sub-disciplines, cope with changing environment, flexibility to adapting to changes (sometimes it means making decisions under stress). Tolerance – connected with open-mind attitude ability to respect opinions and view that are not shared (avoiding prejudices and fight against evil not on the basis of severe condemnations or hatred, but on the basis of attachment to what is believed to be right). Civil courage – the ability to defend one's rights in social situations without violating the rights of others to defend them, expressing own views, emotions, attitudes and professed values and rejection of protection attempts. It is also ability to break the usual patterns of the didactic process and admit mistakes, failures, ignorance to a given questions. Internal discipline – it's the ability to sustain long-term efforts (prioritising goals and tasks) conscientiousness (which reflects the organization, perseverance and motivation of the individual in goal-oriented activities) with understanding and controlling own emotions. Activity – taking initiatives to improve (knowledge, research projects but also working conditions or material status). Intellectual honesty – following in thinking to the end, regardless of the consequences to which a given thought may lead, providing certain, tested information (responsibility for the truth and validity) but also openness to criticism of own and other people's views, reporting doubts. Responsibility - not only for correct information, but also interest in social issues. Socialization – overcoming egocentrism (readiness to help other), ability to cooperate, empathy and developing own cultural interest. Aesthetic sensitivity, sense of humour – having a distance to current events on the "macro" scale, avoiding excessive seriousness (not externalising bad moods, indispositions), care for an external appearance that is adequate to situations.

3. Conclusion

There is no consistency in the literature, which skills in the tertiary level of education are the best and what kind of teaching process is the most effective. The competence model proposed in the article was based on literature review and became a frame for building a tool to evaluate competency gap among academic teachers from Indian Universities as a part of the ERASMUS+ project "Establishment of Capacity Building Centers as a sustainable solution to raise the standards of teaching staff in Indian HEIs". The developed tool was divided into four groups of items named: specialist teaching skills, communication, leadership and personal development. The first three groups are directly connected with skills, but the last one – personal development, is concerning rather attitude than skills. This is due to the fact that higher education is not only educating, but also shaping attitudes of responsible mature people, who respect opinion of others, and are inspired to self-development through knowledge and socialization. This is the main reason for going beyond specialist teaching and communication skills and broaden the scope of the analysis with leadership and personal development. On the one hand, academic teachers are responsible for achieving HEI's goals, which

requires the ability to set a vision, to postpone the long-term goals, to divide the goals into tasks, to coordinate, organize, measure and set priorities for the members of the group for achieving good results of the group. On the other hand, the academic teachers are responsible for the comprehensive development of students, who should be prepared to live in society, should be responsible and involved in what they do, and should have knowledge, skills and social competences adequate to the needs of the labour market. Moreover, teachers have very important role to encourage creative and critical thinking, presenting and defending own thoughts. To achieve such aims, there is a need for specialist teaching skills, particularly the ability to choose and use proper teaching methods and manage courses and students. All described skills should be connected with effective communication, which gives the opportunity to agree on goals, but also to receive feedback.

The profession of an academic teacher is unique in both place and role in contemporary society. The educational process involves an interaction between students, learning materials and teachers, hence it is very important to prepare teachers for the profession, which should focus on equipping with appropriate skills and competences. It should be noted that only subjective treatment of the student would enable the creative nature of the educational process and transfer these experiences to the area of future professional work. Achieving the ability to communicate and interact in subject relations, with respect for the rights of others, is essential in preparing future academic teachers.

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Thinking-Skills for Excellence in Higher Education

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Abstract

To bring out excellence in higher education is sometime vague adjective of expressions but as a value for institutes or universities imparting higher education it became very dynamic terms. The very aim of education is to enable individuals in maintaining and contributing towards the social growth and its continuity. Looked upon this aim government, institution and universities can achieve the excellence in higher education only if their students or other associated stakeholders engender the individual and social efficiency an obligating factors for social growth. In turn the social and individual efficiency depends on experience the students receive during higher education process by applying his or her thought process or simply thinking skill. Thus in the cycle of imparting higher education to students and social continuity the students thinking skill, that also treated as life is necessarily very imperative. Hence incorporating the thinking skill and design in higher education as a part of curricula will certainly result in more smart individual and society as well. The present paper is effort to discuss the tenets and purpose of education that directly connected with maintaining excellence in higher education along with redefining the aim of higher education current dynamic milieu and discussion on some of the taxonomies on the thinking skill so as to improve the individual thinking skills.

Key word: *thinking skill; social efficiency; educational excellence*

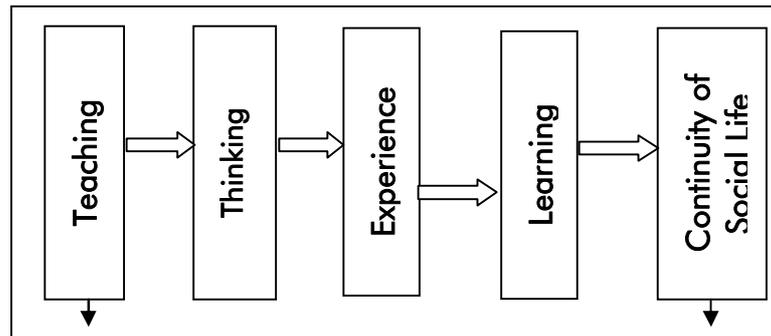
JEL Classification: A2, A20, A290, A230

1. Introduction

Distinction more precisely between living and non-living things is that, former maintain its existence by renewing itself while later does not. Thus human beings renew and conserve themselves using energies surrounded in their environment and maintain continuity of life. For many a time individual commits mistake by treating continuity of life as physiological change but life continuum is more than to it and in addition to prolongation of physical existence it constitutes act of making formerly experienced beliefs, values, ideals, morals, aspiration, hopes, goals & objectives, happiness and glooms by individuals, experiencing repeatedly. Existence of society for that shake of groups; of individuals is build upon on carry forwarding the one's life experience to others for continuous survival, as of because every member of the modern society is born lame, immature and without language as in savage society.

Carry forwarding experience gained by mature members of the society to those who born immature or lame obligate transmission though communication of life skill such as practices, interest,

beliefs, purpose, norms and information for maintaining the perpetuity of life of groups or otherwise society and if not society ceases to end. Here, in process of **transmission of these habits, feeling and thinking emerge role of education to play**. The young or immature members of the society or of the groups since birth are so helpless they even could not manage their own physical existence and remain dependent on the experienced one of the society or groups, obviously it necessitate teaching and learning for sustained existence of the society. Apparently human being in the process of maturing in life journey and for continuity of social life of individuals or of groups or of society must go through sort of experience. In turn experience demand thinking and teaching and learning are very foundation of thinking.

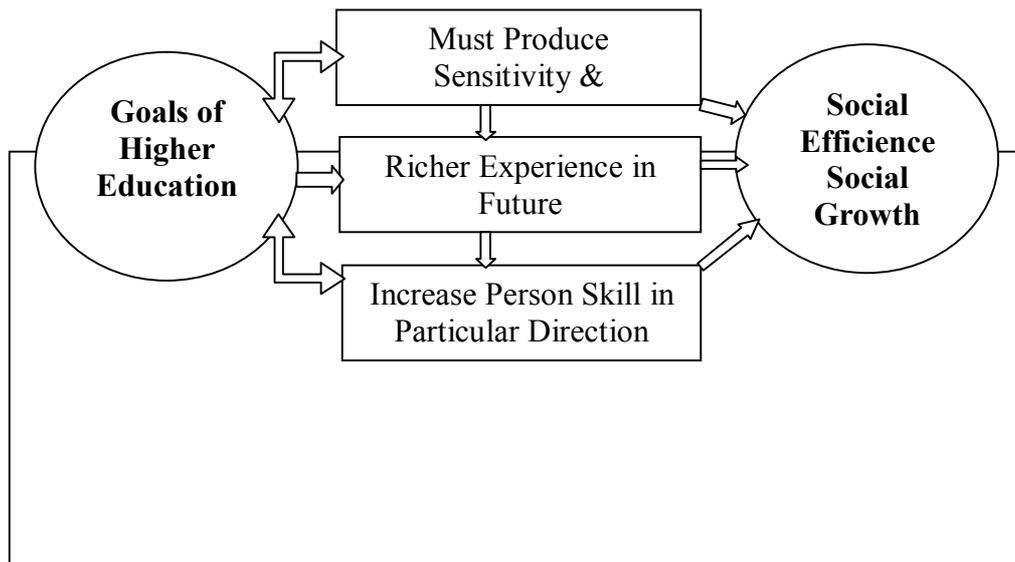


Thinking is the method of an educative experience. Along these lines, for the method of thinking possibly some of the essentiality is must, such as genuine situation of experience – activity in which individuals are interested in; genuine problem within the situation that stimulate the individuals thought; individual must be capable of drawing out information and carrying out the observation to deal with it; alternative solution shall be occurred to individuals so as to develop structured way to deal with the problems and finally individual must apply the outcome or solution or ideas towards the problems [Dewey, 1916].

2. How can we think about higher education goals and its changing dynamics

Higher education for that shakes education much of the time explicitly and implicitly looked upon traditionally as transmitting the information and skills that have been devised in the past. In such a way, in a classroom the teacher who is active functionary in a class, pass on standard of proper conduct or information to the students specially from the books which are much of the time represent the wisdom, information, skill, ideas, innovation occurred in the past. If this is so in the modes of teachings in the higher education, there is much likelihood of imposition of adult standards, subject-matter and methods, which may not be sui Tab. for the existing capacities of the young or the students, as of because they may be beyond the reach of experience they already have in before. Here learning mere means acquiring by students what already been incorporated in books and in the thoughts of the teacher or instructors'. This process of learning though past possibly not lead to sound experience. Prolongation of learning, necessitate the production of continuity in experience, successively which is the requisite for existence of social life. Further to have continuity in experience for individuals or students, it insist that, experience the students had in past must engender growth of further experience [Dewey, Experience and Education, 1938].

Consequently the goal of higher education in its deep and expansive sense in current locus as in depicted in above figure must be social efficiency and social growth. To realize this goal of higher education, universities across the world those who impart higher education must design such curriculum, which must be capable of producing richer experience to the students. Richer experience by the students is the outcome of how universities or institutions design the thinking skill more precisely in current education milieu critical thinking for their students.



3. Thinking skill (critical) taxonomies for promoting rich experience

For the reason that the boundaries of the nations across squeezing due to wave of globalisation, so thus the higher education enter into an era of transition. This era is stupendously characterized by converting need into product; extreme speed of information to which students and stakeholder are accessible which coupled with changing demography of the students. This compelled the higher education institutes to satisfy the demands and needs of their associate stakeholder, to adopt the structural changes in their functioning so that to embrace organizational innovation, responsively, and adaptation. Design thinking or conditioning students in higher education for thinking critically offer an important pathway for satisfying the demands of the stakeholders (Clark G. Gilbert, 2017). Once the students in higher education attain the knack of thinking critically, he or she can be infusing with rich experience in doing and can became abler to serve the stakeholder requirement in better way.

Tab. 1. Critical thinking skills

Lower-level thinking skills (“Foundation”)	Higher-level thinking skills	Complex thinking skills	Thinking about thinking (CT)
Interpreting	Analysing claims	Evaluating arguments	Metacognition
Identifying assumptions	Synthesizing claims	Reasoning verbally	Self-regulation
Asking questions for clarification	Predicting	Inference making	
		Problem solving	

Source: (Davies) A Model of Critical Thinking in Higher Education

Tab. 1 describes the models for critical thinking and support way forward to gain cheerful experience so as to learn and cultivate the positivity in attitudes. It began with developing interpretative ability at lower level to Metacognition and self-regulation at higher level and it certainly insist the higher education institutes to incorporate the content in their curriculum, which support to shape require thinking skill from lower level to self regulating level.

Tab. 2A & 2B also describe in more precise and strategic manner the Bloom’s Taxonomy for developing the thinking skill in students of higher education institutes. It has been evolved much of the time since 1956 to fit the changing requirement. Bloom’s taxonomy is one of the proven and tested methods for preparing the students in higher education to think critically. It covers stepwise minutes facets of thinking evolution and stipulates the student to gather the information, ideas, and principles

in the approximate form in which they were learned at the outset. In further course of action the taxonomy direct the student to translates, comprehends, or interprets information based on prior learning after following the further steps as discuss in the Tab. finally students put in to appraises, assesses, or critiques them on the basis of specific standards and criteria. In such a way Bloom' taxonomy helps to moulds the students as critical thinker by infusing the ability to think and design their mind critically

Tab. 2 A. Bloom's Taxonomy in practice - a hierarchy of thinking skills (Continued...)

Category	Level 1 Knowledge	Level 2 Comprehension	Level 3 Application
Description	Information Gathering	Confirming	Making use of knowledge
The skills demonstrated at this level are those of	<ul style="list-style-type: none"> • Observation and recall of information; • Knowledge of dates, events, places; • Knowledge of major ideas; • Mastery of subject matter. 	<ul style="list-style-type: none"> • Understanding information; • Grasping meaning; • Translating knowledge into a new context; • Interpreting facts; • Comparing; • Contrasting; • Inferring causes; • Predicting consequences. 	<ul style="list-style-type: none"> • Using information; • Using methods, concepts, theories in new situations; • Solving problems using required skills or knowledge.

Source: www.open.edu/.../Bloom_s_Taxonomy_in_practice_-_a_hierarchy_of_thinking_skill

Tab. 2 B. Bloom's Taxonomy in practice - a hierarchy of thinking skills

Category	Level 4 Analysis higher order	Level 5 Synthesis higher order	Level 6 Evaluation higher order
Description	Taking apart	Putting Together	Judging outcomes
The skills demonstrated at this level are those of	<ul style="list-style-type: none"> • Seeing patterns; • Organization of parts; • Recognition of hidden meanings; • Identification of components. 	<ul style="list-style-type: none"> • Using old ideas to create new ones; • Generalizing from given facts; • Relating knowledge from several areas; • Predicting, drawing conclusions. 	<ul style="list-style-type: none"> • Comparing and discriminating between ideas; • Assessing value of presentations; • Making choices based on reasoned argument; • Verifying value of evidence; • Recognizing Subjectivity.

Source: www.open.edu/.../Bloom_s_Taxonomy_in_practice_-_a_hierarchy_of_thinking_skill

4. Conclusion

21st century is full of dynamism and transforming more and more towards the digital age, human life engrossing with materialism and so the way of transmitting the education especially higher education and its modes also dynamically are changing. Irrespective of these changes a thing, which is common and was & will remain common is its notion of excellence. Institutions and universities can maintain the excellence in higher if and only if they succeeded to contribute towards the aim of social efficiency and social growth as it activate the perpetuity of life so the societies and nations across. In conjunction, thinking skill is one of the attribute that helps individuals and students to have enrich and enlarge experience stimulate themselves towards the learning capabilities, formation attitudes and habits compulsory for social growth in continuity.

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Consumers and the Innovative Activity of Food Processing Companies in Poland

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Abstract

The development of civilization means that the preferences, expectations, attitudes and behaviour of consumers change. Information and communication technologies of the twenty-first century prompt new ways in which buyers live their lives and meet their needs, also in relation to nutrition. This has inevitably influenced the innovative activities pursued by food companies, knowing that consumers are the main recipients of innovation. The aim of this article is to discuss the role of consumer orientation in the innovation prowess of food companies. Research proceedings involved the review of literature, statistical data and selected results of own empirical research in a group of 364 consumers carried out using the survey method. Findings indicate that knowledge of how well consumers accept innovation and of mechanisms determining its adoption are very important in the process of creating and implementing innovations, especially in the food sector which is an important pillar of the Polish economy.

Key words: *consumers, food industry, innovative activity*

Introduction

Increasing global competition and stricter customer requirements are exerting a significant pressure to improve the pace and quality of innovation processes in the food industry [Fortuin, Omta, 2009]. The literature increasingly often recommends creating innovations in accordance with the pull approach (pull strategy), which implies updating corporate outlook and attaching great importance to the consumer and other business partners at all stages of the innovation process [Olejniczuk-Merta, 2014]. Nowadays, the consumer is becoming not only the recipient of innovative solutions, but also their creator.

In the face of these changes, understanding consumer behaviour and including consumers in business strategies has become a key task for further development [Vrontis and Thrassou, 2007]. Therefore, consumers are now an increasingly important source of information for businesses in the process of developing new solutions to meet their needs. The aim of this article is to discuss the role of consumer orientation in the innovation prowess of food companies. Research proceedings involved the review of literature, statistical data and selected results of own empirical research in a group of 364 consumers carried out using the survey method.

Methods

Research proceedings involved the review of literature, secondary data and own research carried out on a sample of consumers living in the border areas of south-western Poland. In the first stage, it was necessary to review the literature on the innovativeness of food processing in Poland and consumer behaviour in the food market [Gutkowska and Ozimek, 2005; Kicińska, 2009; Sojkin et al., 2009; Gutkowska, 2011; Kowalczyk, 2011; Barska, 2013; Juchniewicz, 2015]. In order to thoroughly investigate the research problem, a survey study was conducted on a population of 364 consumers. To assess the reliability of the measurement scales, the Cronbach's alpha test was used, giving the value of 0.776, which means the correct reliability of the scales [Hinton et al., 2014].

The collected raw data was verified in terms of clarity and accuracy. From the obtained questionnaires, 364 were classified as complete and suitable for further analysis. Consumer attitudes and behaviours towards innovative food products were examined. In addition, it was verified whether these attitudes and behaviour were related to selected socio-demographic variables. A statistical analysis of correlations between pairs of variables was performed using the Pearson's chi-square test of independence. Whenever the test assumptions were not met, the p-value value was determined by means of simulation using the Monte Carlo method. The significance level of 0.05 was adopted. The strength of the relationship between the pairs of variables was determined using the corrected contingency coefficient ($C_{kor.}$). To examine coexistence of the categories of a larger number of variables, correspondence analysis was performed [Stanimir, 2006].

The role of the food sector in Poland

In accordance with the Statistical Classification of Economic Activities in the European Community, the food sector covers the production of food articles (C10), beverages (C11) and tobacco products (C12). It is an important branch of the Polish economy, whose value of sold production in 2017 (excluding the tax on goods for services and excise duty) was PLN 5.620 million. This corresponded to 21.4% of total sold production in industrial processing (one of the highest results in the EU) and 18.12% of total industry sales. The same year, 367,900 people were employed in the food sector, or 16.7% of those employed in industrial processing and 14.3% of those employed in industry. The Polish food industry also enjoys an important position in the European Union. Poland - along with Germany, France, Italy, Spain and the United Kingdom - is one of the largest food manufacturers from among EU Member States. Taken together, these countries account for approximately 70% of all employees working in the food industry across the EU and for nearly 70% of the EU's global food production. In Poland, the food industry plays a particular role in the economy due to its relatively high share in GDP - as is also the case in Bulgaria, Lithuania and Romania - and a large number of employees in the food sector. The role of the food sector in Poland is predominantly determined by the prevailing focus on agriculture. However, a relatively low level of production efficiency in this sector is also observed, resulting mainly from low labour productivity [Poczta and Beba, 2014]. In 2016, food exports from Poland totalled PLN 46.471.3 million, making Poland the eighth biggest exporter of food products from among the EU countries [Rocznik Statystyczny Przemysłu, 2017].

The innovativeness of the food sector in Poland

An important factor influencing the efficiency and competitive advantage of an agri-food processing company is innovativeness. Innovativeness is defined as the tendency of an organization to innovate, playing an important role in the organization's success in the long-term perspective and its better performance. Innovativeness is a multi-stage process in which organizations transform ideas into new or improved products/services or processes in order to successfully advance, compete and stand out in the market [Baregheh et al., 2009]. Innovative activity allows businesses to stay ahead of their competitors, overtake new market segments, and retain the existing ones by maintaining their

interest in the products of a given manufacturer, and as a result, achieve a stable position in a market segment. Thus, innovativeness protects against early aging, loss of position, and loss of customer trust [Radzewicz and Strychalska-Rudzewicz, 2013]. Implementation of innovations is related to the desire to improve quality, boost productivity or increase the profitability of production. By implementing innovations, one can increase the level of customer satisfaction, use market niches and expand to new markets, increase product range or improve productivity [Barska and Śnihur, 2018]. In the food sector, implemented changes may concern food-processing technologies to improve food safety, make it more convenient to use or improve its taste, or they may also be related to change in the distribution system, packaging or forms of promotion. Innovative activities help make the economy more competitive, including the food economy on a global, national and regional scale [Zieliński and Żmija 2013].

Poland used to be among the countries marked by the low level of developing and implementing innovations, but it should be noted that – compared to previous years – the country has been faring systematically better in the overall ranking [Juchniewicz, 2015]. An observation can also be made that the food sector accounted for 23% of the systematic small increase in the number of innovative enterprises in 2010-2012, with this share reaching 24.3% in 2012-2014 and 25.9% in 2014-2016. Innovative activity in the food industry concerns primarily the development and implementation of new or significantly improved products/services (product innovation) or processes (process innovation), where these products and processes are new at least from the point of view of the very company that introduces them. They include a number of research (scientific), technical, organizational, financial and commercial activities [Barska and Śnihur, 2018].

Innovative activity of food-processing companies is associated with scientific and research activities that require expensive, specialized equipment and highly qualified employees. The implementation of innovative products is related to the use of modern technologies, the purchase of specialized software, external specialist support, which is reflected in the costs that are much higher than the mere maintenance of the previously used technological lines.

The reasons for the low pace of introducing innovations in Poland, and the high rate of failure of new food products, are [Figiel, 2016]: ease of imitation, risk aversion, difficulties in obtaining patent protection, the fact that emerging new products are usually substitutes, positive consumer attitude towards traditional products, and growing consumer expectations towards food safety.

Researchers emphasize that innovative activities of food sector operators are significantly hindered by two factors. First, the food and beverage industry is viewed as conservative in terms of introduced innovations [Costa and Jongen, 2006]. Second, food innovations are characterized by a high rate of market failure, partly due to neophobia, lack of knowledge of consumer expectations and behaviour, lack of awareness in the area of new consumption trends, as well as inappropriate marketing policy [Barcellos et al., 2009]. A food company wanting to operate and be successful in the market must skilfully evaluate its new products taking into account the perspective of their buyers, which is often different from that of the manufacturer themselves or the applicable legal standards. Knowledge of new trends in consumption and consumer behaviour, coupled with the involvement of retailers, is key factors to success in the development of new food products [Stewart-Knox, Mitchell, 2003].

The innovative behaviour of food companies is influenced by both internal and external determinants. A company's potential is associated with its financial resources, infrastructure and the state of technical knowledge. Environmental conditions spring from trends in consumer behaviour as well as from legal, economic, technological and demographic aspects of the macro-environment. In particular, these are [Costa and Jongen 2006, Gutkowska and Ozimek 2006, Sojkin 2012, and Szwacka-Mokrzycka 2013]:

- state policy and state bodies, including new administrative, legal and institutional solutions (e.g. investment incentives, launching government support programs for innovativeness in business, building human capital);
- innovative activity of other business entities operating in the company's environment;
- the company's competitive edge against other businesses;

- changes in the food chain (e.g. new raw materials, food additives, technologies, production systems, materials and equipment for packaging production, distribution channels);
- research and development (R&D) activities of research centres as well as cooperation with them;
- demographic changes manifested in the increase in life expectancy, decline in birth rate or a reduced number of households;
- new consumption trends.

In particular, new trends in consumer behaviour in the food market may affect the preferred attributes of a food product; respecting them also gives the opportunity to effectively compete with food manufacturers by introducing a series of innovations that shape specific supply trends. Considering the role of the consumer in the processes of innovative food companies, attention should be paid to the bilateral dependency existing there. On the one hand, innovation is a response to new trends in consumer behaviour, while on the other hand it stimulates the mechanism of changes in consumption.

It is worth pointing out the trends which trigger changes in lifestyles in the contemporary world and which may have an impact on the shape of the innovative activity of food companies. These are [Mazurek-Łopacińska, 2013; Kucharska, 2014]:

1. striving to live in harmony with nature and to practice sustainable consumption,
2. striving for comfort and convenience,
3. searching for unusual adventures to experience new sensations and emotions, and following the cult of youth as an important value,
4. prosumer activity,
5. widespread exploitation of the achievements of modern technology,
6. a home-centered lifestyle - isolation from the outside world,
7. striving for individualization, to stand out from others,
8. undertaking various forms of consumer cooperation and self-service,
9. enjoying small pleasures with the use of various products.

The importance of consumer innovation in the light of literature review

As already mentioned, the changing needs and expectations of consumers on one hand provide the basis for creating innovations by companies, while on the other, companies, by developing innovative solutions, shape consumer behaviour. Creating innovations in a company is a process that begins with understanding the market and the customer, by observing consumers in certain situations, and by discovering their hidden needs. The next step is to envisage and visualize new products and people using them, their evaluation and improvement before the new product is implemented.

For consumers, an innovative company is one that is modern, and which introduces modern solutions, cares for customers and satisfies their needs [Kucharska, 2013]. Companies indicate that innovations provide consumers with convenience, comfort, security and allow them to meet their expectations to a greater extent. They help improve the quality of life and respond to the changing behaviour and habits of consumers. An innovative product is better adapted to the requirements of consumers, offering them more opportunities.

The adoption of innovations by the market depends on the innovativeness of buyers, their behaviour and openness to new solutions. Consumer innovativeness is readiness and motivation to buy and utilize market innovations. According to Everett M. Rogers, an innovative consumer is one that will adopt innovations sooner than others [see Gutkowska, 2009, p. 116]. Innovators are people who: are open-minded, have a passion for adventures, show a strong need to maintain social relations [Mazurek-Łopacińska, 2003]. Acquisition of innovative products may be associated with the desire to purchase products corresponding to the latest fashion trends, which can be justified by launching a specific mechanism that allows reconciling two parallel trends in consumer behaviour, i.e. a desire to stand out, emphasize their individual identity, and a tendency to imitate, be more similar to others. What motivates consumers to use innovations is the willingness to be up-to-date, to follow trends, to

try new things. It is also important for them to be able to show off to friends and have social prestige. Everett M. Rogers considers the following to be the factors conditioning the dissemination of innovations: a relative advantage over previous solutions, compliance with the experience and values of potential buyers, low complexity, testability and observability. A relative advantage means that the customer must recognize the benefits of innovation, as this will allow them to justify investing their money and time in a new solution. Consumers will not accept an innovation if they fail to see the benefits it provides to them, meaning that price is also important because consumers compare and assess whether a given change will pay off. Compatibility with experience and values is associated with reluctance to change in our lives, habits and customs, while innovation is associated with the need to depart from the accepted ways of conduct and the need to learn a new one. In order to minimize the risk of innovations being unsuccessful, companies should engage consumers in the process of their creation [Makarski, 2013].

However, there are groups of products for which innovation is less desirable. These include food products, which is why, in relation to this group, it is particularly important to monitor the course of innovative processes. Consumers are also concerned about loss of money, adverse health effects, potential hazards, inappropriate taste, composition, quality, and negative opinions of friends [Sojkin, 2012]. The consumer food market shows a markedly high conservatism, and consequently – a low level of innovation adoption in relation to traditional products such as bread. Innovations in this area are associated negatively by consumers, most often bringing to mind additives that cause products to lose their taste and value [Gutkowska et al., 2009, pp. 118-119]. Innovation in the food market is positively received if a new food product: comes with additional qualities, has a new taste and new packaging, is enriched with additional nutrients, contains fewer components harmful to health, is attractively priced, is promoted and advertised, and has been well received by family and friends [Sojkin, 2012, Gutkowska, 2011].

In shaping consumer innovativeness, that is their willingness to buy new products, awareness plays an important role, especially with reference to new solutions available in the market, new needs, and the use of these solutions. Information is therefore needed about available products and services, as well as the benefits they offer consumers. In the process of making purchase decisions for new products, a number of stages can be distinguished: awareness of the existence of new products in the market, interest, evaluation, testing and acceptance. In the first stages, mass media play an important role, as they make consumers aware of the existence of the product, while personal sources of information - i.e. friends and family - are more important at the stage of product acceptance (Mazurek-Łopacińska, 2003). Marketing communication, and then communication aimed at consumer awareness, has the biggest impact on the product being noticed. Another factor is the attitude of the consumer towards the new product, their personality, consumer innovativeness, i.e. readiness to buy new products, explore shop displays, consult sellers and the immediate surroundings [Sojkin, 2012]. An innovative consumer is someone who uses and knows how to use novelties, is open-minded, demanding, knowing their needs. Innovation opponents, meanwhile, dislike changes, are traditionalists, use new products unwillingly [Kucharska, 2013].

Consumers and innovation in the light of own research

In investigating the process of diffusion of innovations, E. Rogers's model (1983) was used, which distinguishes the following groups of consumers due to the rate of adoption of innovations: innovators, early and late followers, early and late majority, and marauders. The research conducted among 364 consumers shows that the largest group were respondents who declared that they buy innovative food products quickly, but upon prior reflection (these are the consumers referred to as early followers), which was indicated by every third respondent. One in four respondents declared acquiring innovative food products after their friends and family have tried them out first (early majority), while every one in five respondents indicated purchasing innovative food products only once the majority of their friends have bought and recommended these products to them (late majority). Reluctance towards new food products and preference of favourite products were declared

by 16.7% of respondents (marauders) [Barska and Wojciech, 2017]. Innovators, or respondents ready to acquire innovative food products immediately after they are launched, comprised approximately 4.5% of the sample (Figure 1).

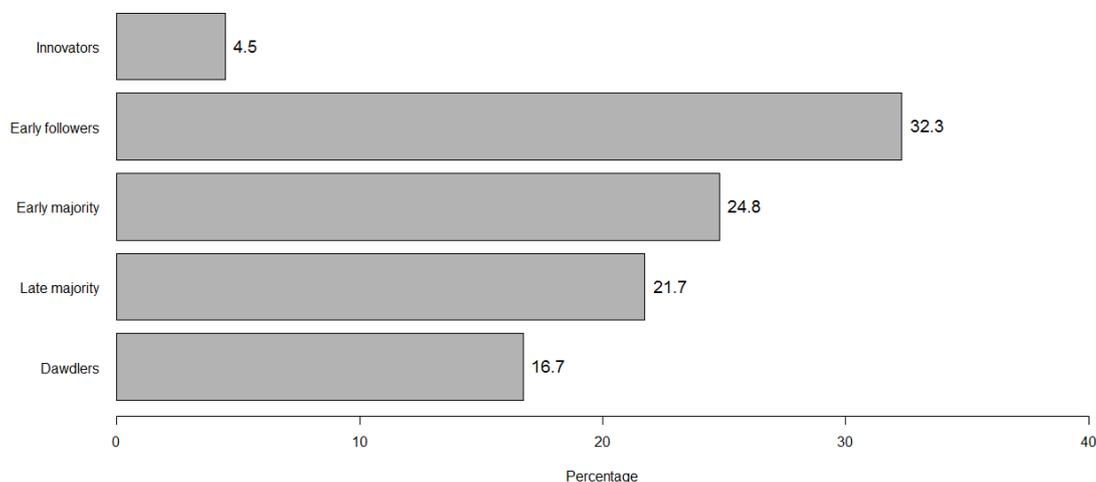


Figure 1. Diffusion of innovative food products among consumers
[Source: own research and calculations (by R 3.1.0)]

Consumers have specific expectations in terms of new products. An innovative product should have beneficial health properties, a lower price, be simple and accelerate the process of meal preparation, has desired taste values, fragrance, availability, and a functional packaging [Sojkin, 2012]. Increasingly better educated citizens are becoming aware of their rights as consumers, being able to use available market information to acquire goods maximizing perceived value. Such consumers are highly demanding of manufacturers and suppliers, expecting quality food products at a reasonable price. Krystyna Gutkowska indicates that consumers expect food products to not only satisfy hunger, but also their hedonistic desires – helping them stay fit, obtaining energy or increasing energy levels, saving time when preparing meals, or promoting the preservation of the natural environment [Gutkowska, 2011]. The research shows that more food product innovations should appear in the market, which will be the source of the following values for the consumer:

1. Positive health effects (lowering cholesterol, sugar and others).
2. Made from natural ingredients, without preservatives.
3. Providing new sensations and experiences through high quality, containing exotic ingredients, giving the opportunity to experiment with food.
4. Positively affecting body weight, containing ingredients conducive to beauty care and relaxation (e.g. foods containing green barley or beverages enriched with lemon balm).
5. New packaging solutions.
6. A longer shelf life.
7. Environment-friendly, manufactured in accordance with the principles of sustainable development.
8. Facilitating everyday life through a shorter time of preparation for consumption.

Information about the product is a factor contributing to the diffusion and adoption of innovations. Information about new foods or their variety must reach consumers. This involves the need to develop the entire information system [Urban, 2008]. An important role is played by marketing communication, which makes people aware of the value conveyed by the consumption of innovative products. It has been shown that knowledge of food can reduce neophobia [Pliner and Hobden, 1992].

Respondents, looking for information about innovations, expressed a different tendency to rely on mass media and interpersonal channels, which can have a significant impact on the rate of diffusion. In the research proceedings, consumers taking part in the decision-making process of purchasing innovative food products were also identified. The majority of respondents declared making these decisions themselves, a response which was given by more than half of them (56.9%). At the same time, every fourth respondent mentioned shopping with his or her partner (27.8%).

Statistical dependence was determined between the family situation ($\chi^2=120.988$, $p=0.0005$, $C_{kor}=0.561$), the situation in terms of income from own work ($\chi^2=28.65622$, $p=0.0019$, $C_{kor}=0.410$) and the professional activity of respondents ($\chi^2=18.802$, $p=0.0004$, $C_{kor}=0.279$). Individuals living alone usually made decisions regarding the purchase of innovative food products alone. Nearly a one in three respondent was both an adviser and buyer in their household. Every fifth respondent described their role as a decision-maker, and almost every one in six thought of themselves as an initiator. It is also noted that the gender roles division is the most diversified in terms of the role of the initiator and the buyer. Women, more than three times more often than men, viewed themselves as initiators, while men more often identified with the role of the buyer.

Consumers most often purchase innovative products in hypermarkets (49% of respondents) and discount stores (24%). It is worth noting here that, in the group of people making purchases in small grocery stores, the percentage of indications of frequent purchases with traditional service was higher in economically inactive people than in economically active respondents. It was the only statistically significant ($\chi^2=7.273526$, $p=0.0263$, $C_{kor}=0.185$) variable that differentiates respondents' behaviour in this area.

Respondents were asked to express their opinion on the main criteria for choosing the place of purchase of an innovative food product. The highest percentage of respondents identified the following criteria as important: price (97% of responses), range of available products (97%) and product quality (95%). Statistically significant correlations were found between consumers' gender and the rank of criteria for choosing a place of purchase such as: payment terms (e.g. card payment option - $C_{kor}=0.202$, $\chi^2=9.352766$, $p=0.0250$), trust in the seller and their credibility ($C_{kor}=0.252$, $\chi^2=14.69299$, $p=0.0025$) and return conditions ($C_{kor}=0.200$, $\chi^2=9.0368$, $p=0.0288$).

To find a correlation between the gender and the categories of selected variables describing the reasons for choosing the place of purchase of the food product, correspondence analysis was performed. The following markings of response variations were adopted for variables defining the criteria for choosing a place of purchase: S - trust in the seller, P - payment terms, and Z - goods return conditions, with the indices being 1 - invalid, 2 - not important, 3 - moderately important, 4 - important. Including behaviour profiles of the surveyed consumers during the purchase of innovative food products in the interpretation of the results, the following categories were introduced to the analysis (passive points): Emotions - describing respondents who make decisions when they are shopping under the influence of emotions; Prudence - consumers who consider their purchasing decisions for a long time; Habit - describes the attitude of people who are routinely guided by the purchase of a food product. Relations between the categories of indicated variables were mapped in a two-dimensional space, reproducing 73.5% of original correlations (Figure 2).

It is evident that the vertical axis separates consumers by gender and at the same time is an important factor differentiating expectations as to the choice of the place of purchase of an innovative food product. Women have medium to high expectations as to the terms of payment, return of goods and trust in the seller when purchasing innovative food products. In addition, it can be said they are guided by prudence and habit in the shopping for such products. On the other hand, men as consumers have rather moderate expectations as to these criteria, and their decisions about purchasing food products tend to be influenced by emotions.

In the article, only selected aspects of Polish consumers' behaviour towards innovation were presented. From the point of view of economic practice, they help in understanding and forecasting the demand for innovative products, as well as in defining their attributes, which makes it easier for managers to develop effective strategies in this respect.

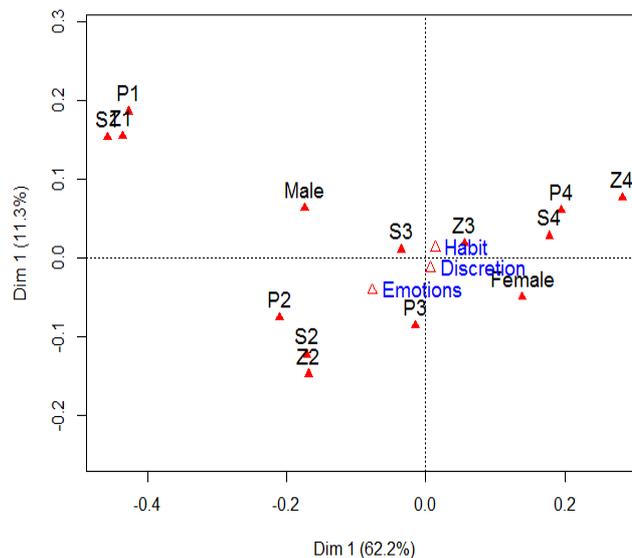


Figure 2. Graphical presentation of results of correspondence analysis for concurrent occurrences of categories of variables: sex, trust in the seller, payment terms, conditions return
[Source: own calculations based on survey research]

Conclusion

Innovations are currently the main driving force modern economies. According to C.K. Prahalada and M.S. Kirshnana [2010] consumer expectations are shaped through innovations, constituting an expression of permanent response to people's changing requirements, behaviours and experiences. The key goal of innovations is not only to improve the rationality of managing all entities involved in the process of delivering products from the place of their production all the way to their final destination, but also to improve the quality of life of society as a whole. Innovation is supposed to bring benefits to consumers, the company and the entire economy. This would not be possible without assuming a consumer-oriented approach in the process of creating innovations. It should be remembered that it is the success of new solutions that determines their ultimate adoption. The changing mentality of consumers who seek solutions also in the area of food product innovation, be it due to their health benefits or the convenience of preparation for consumption, stems, among others, from the changing trends in nutrition and health care, personal comfort and time savings. These lifestyle changes in the area of nutrition can become a determinant for the innovative activities undertaken by food companies. Knowledge of the acceptance of innovation by consumers, coupled with mechanisms determining its adoption, are very important especially in relation to the food industry, which is an important pillar of the Polish economy.

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Assessment for Learning and of Learning to Achieve Course Outcomes in Mathematics for B. Pharm Students in Parul University

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Abstract

Teaching Mathematics in Pharmacy is always a challenge. It is utmost important to know and recognize student's mathematical background. In other words, ways to know their previous knowledge in the subject and employ various teaching techniques accordingly in the classroom situations is described. Above and beyond, another major trouble is the constraint of time. Many topics have to be covered in a short semester course successfully. This paper discusses the way to construct an assessment instrument to assess the student's basic mathematics background and the technique to apply pre and post test to assess the course outcomes. We have analysed the teaching effectiveness using a Statistical Software package SAS.

Key words: *assessment, basic mathematics background, course outcome, statistical software package SAS*

1. Introduction

It is a well-known fact that Mathematics is considered as the base or the root of all the academic subjects. Starting with primary level education to the any higher level, irrespective of the field, mathematics is utilized and acted as a strong pillar. So, proper assessment in mathematics is highly expected as well as recommended by all viz, students, parents, academicians, industries, politics and many more. Two types of assessment are globally exercised such as Formative assessment and Summative assessment. The pioneer of Formative assessment is Michael Scriven [3], which he introduced in the year of 1967. But, it was not known to the world until 1988 when Paul Black and Dylan Wiliam [4] published their research review about formative assessment. Formative assessment gives valuable information, which can be used in different ways by the teacher in various classroom academic situations, which could be related to the assessment for the learning. On the other hand, summative assessment is used at the end of the instructional unit or a course, which basically concerned with the assessment of the learning. It generally refers to provide a grade or marks to the students, which represent their level of performance in any particular subject. However, a range of methods was used extensively by the teachers in order to scrutinize their students mathematical learning to notify them for their future instructions. Hence, such assessment gives further direction for upcoming educational instructions. Policy makers around the world are relying more on an external assessment as to evaluate them globally and also to compare their achievement with other countries students. Consequently, majority of the stakeholders give importance to assessment and due to which

educators at many levels finds assessment as an interesting topic. Hence, assessment is a very essential tool, which gives insight to the teachers through assessment for learning and for the students via assessment of learning.

Moreover, an ongoing practice of internal assessment enables teachers to monitor learning as a part of their teaching process. Teachers can make data-based decisions to adjust instructional strategies so that they accommodate the different needs and learning styles of students. Assessment methods have been changed tremendously over a period of time in order to sustain and fulfil the requirement of generation to generation. In this new era of digital world, education has taken a meaningful shift by ensuring that if students do not learn the way they are taught, they can be taught the way they learn. In order to have maximum output in the assessment this can only be ensured through proper way of assessment tool.

It is an undeniable fact that mathematics is omnipresent. From solving easier day-to-day life problems to the complex problem of various industries, Mathematics has proved its strong feet in most of the field of education. Thus, all the undergraduates in every concentration along with pharmacy here in Parul University are required to take this course. The course has 2 credit hours and is offered by the Applied Sciences and Humanities department in each section in the first semester of Pharmacy. These course could be opted by the one who has taken science stream in their higher education either with Group-A, having Mathematics not Biology and Group-B having Biology not Mathematics. Apart from that, each student have to fulfil the eligibility criteria either by appearing in NEET exam the one who has studied Biology and in GUJCET the one who has taken Mathematics in their higher education. A minimum of 120 in NEET or 56 in GUJCET students is allowed to register in this course. The students in the class are from the diverse culture. Their ages range from eighteen to twenty.

The class was first offered in the year 2004 at Parul Institute of Pharmacy, and in the year 2005 at Parul Institute of Pharmacy and Research, since the year 2004-2005 till the year 2015 the course was offered in the first semester of the pharmacy and after the commencement of Parul University in the year 2015, the course was offered in first and the second semester of the first year of Pharmacy in both the institutes of Pharmacy. However, in the year 2018 according to the norms described by Pharmacy Council of India the course is now offered only in the first semester of Pharmacy.

The course covers topic such as Matrix and Determinant, Calculus, Analytical geometry, Differential equations, Partial fraction, Logarithms, Functions, Limits and Continuity. The instructor prepares 30 lectures in 15 weeks. Apart from this assignment of each unit is given after the completion of the chapter in the classroom as an extra practice, which is assessed by an instructor regularly.

According to PCI (Pharmacy Council of India) teaching scheme, assessment is done by taking internal and external written exam. Also, through continuous evaluation process by using various assessment techniques like weekly test, class test, surprise test. But, finally we have used statistical software package, SAS [1] to analyse the effectiveness of the instructor's teaching

2. Course Outcome

The first and foremost step is to classify the program outcomes for the course of Pharmacy. And then the course outcomes must be in line with the program outcomes. They were designed broadly for each major topic covered in the course.

Outcome #1 expects students to be able to understand the partial fraction and apply the knowledge of it in chemical kinematics as well as in the Pharmacokinematics. Student can use their previous knowledge of logarithm first to go further in understanding the complex principles of logarithm and will be able to solve many pharmaceutical problems, outcome #2. Through outcome #3 students can solve the intricate pharmaceutical equations. Outcome #4 expects students to understand the differential equation. In other words, students need to understand the rate of change of one quantity with respect to another quantity and apply this concept in practice of preparation and dispensing of medical drugs. Also, to determine the rates of drug elimination and absorption in the body. Moreover,

to make dosage according to the weight and height of the patient, which is majorly employed in making the model for the cancer patient hyperthermia. Finally, in the outcome #5 students are expected to draw a conclusion about qualitative behaviour of pharmacological processes that has been modelled.

Outcome Number	Students who complete the course will be able to
1	Apply knowledge of Partial fraction in chemical kinetics and pharmacokinetics
2	Apply of logarithmic to solve pharmaceutical problems
3	Solve pharmacokinetics equations
4	Use Differential equation model arising in medicines (Cancer therapy hyperthermia), numeric speed is required to permit a fast simulation of different scenarios for the different patients
5	Draw a conclusion about qualitative behaviour of pharmacological processes that has been modelled

Further in the next step, we will describe the ways to design pre and post test assessment instrument in order to gather essential information for analysis.

3. The Assessment Instrument Design

In general pre-test is used to know the previous knowledge of the students. It is one of the best ways to know the background knowledge of the students and to draw significant inference about the level of the student in the study. It is utmost vital for an instructor to know educational status of their students as many course outcomes is to be measured and many students are there who has not achieved the required grading. We need to use multiple-choice questions along with the some short answer questions in the pre- and post-test so as to collect the data easily.

Pre-Test and Post-Test

In most the cases, pre-test is given in the beginning of the academic year, as the pace of the course is teaching is fast due to covering many topics, there is no time for conducting it except in the beginning of the semester. On the first day before starting the main topics to teach students were given the pre-test to check their previous knowledge. It is graded as an extra credit; no credit would be added to the course outcomes.

We have created five instrument questions only for pre-test to measure a randomly picked five areas in the mathematics for Pharmacy. Those five areas are solving a linear equation of two variable counting, application of set theory for understanding function and limit, co-ordinate geometry and counting.

We will measure all the five outcomes. There were different opinions to measure it, whether to keep same questions in the pre and post-test or to put different questions with the similar questions. On the other hand to give them enough assignment of the questionnaire of the same topics and asking questions from that in the post-test. The pre-test questions in the assessment instrument, which matches to the outcomes, are shown in the table below:

Pre-Test Question Number	Measure Topic	Outcome number
3, 4, 5	Logarithm	2
11, 12, 13	Partial Fraction	1
17, 18, 19	Matrix and Determinant	3
7, 8, 9	Differential Equation	4
10, 15, 16	Calculus	5

In the further stage, with the help of graph we will deduce whether the students have reached to the outcomes or not.

4. Analysis

Descriptive Statistics

The data is of the first year student of Pharmacy who has taken admission in the year 2018. The mathematical background irrespective of their Group-A or Group-B is shown in the graph below.

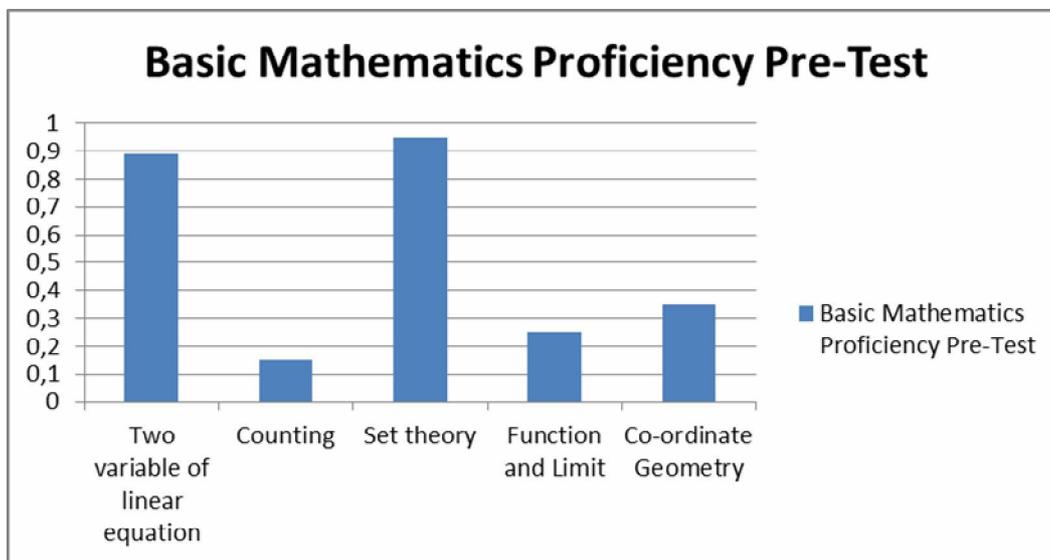


Fig. 1. Pre-Test

Figure 1 exhibit that percentage of the students who gave correct response is between 85% to 95% among the topic linear equation in two variables and set theory.

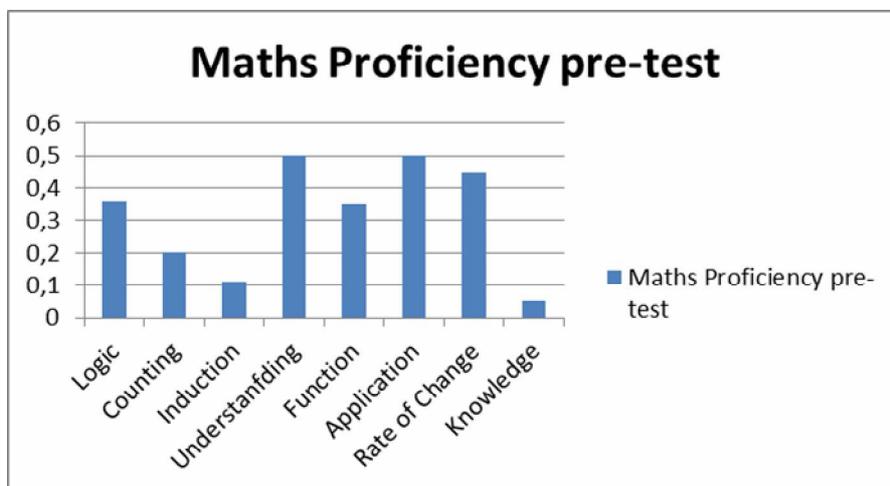


Fig. 2. Students Pre-knowledge Summary

In the Figure 2 we can clearly say that students are clearly more prepared for the understanding, application and rate of change type of the questions.

In the Figure 3 below we can compare the post-test result with the pre-test result. Here Y2 represents the pre-test result and Y3 represents the post-test result

From the Figure 3 it is absolutely clear that there is a remarkable improvement in the Pre-test and the Post-test results among all the various concept of mathematics which were essential to understand for applying it into the real life situation related with the field of Pharmacy.

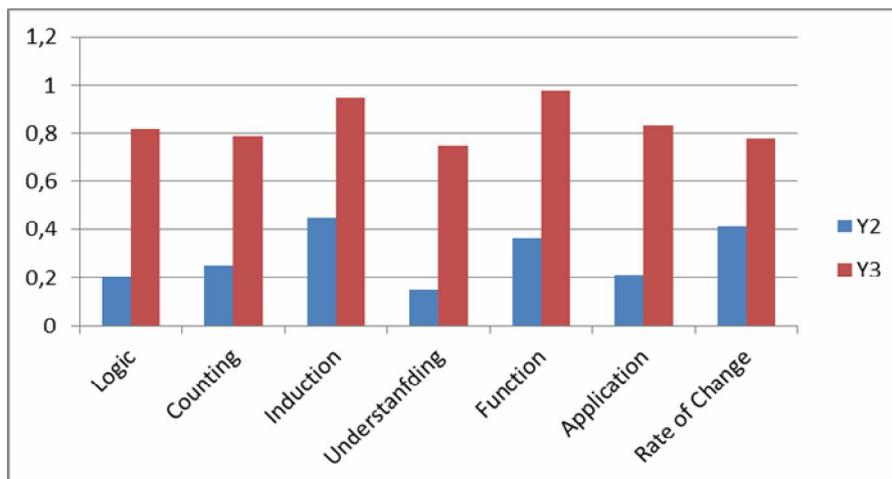


Fig. 3. Students Pre-test and Post-test Comparison

Test Statistics

We test the null hypothesis: No difference between pre and post-test results in all the categories versus the alternative hypothesis. Post-test results in all the categories are higher than those in the pre-test. A statistical SAS is used to perform the hypothesis.

1. Test Normality

Using Kolmogorov-Smirnov the test of normality of the sample distribution of fit test [3] is given by SAS. 0.0967 is the value of p. Therefore at 0.05 level, we do not reject the null hypothesis that the samples are from a normal distribution. Because of that reason to test the student's outcome we can proceed to use an ANOVA test.

2. ANOVA Test

ANOVA test has three different classification, Pre/Post-test, different semesters and mathematics categories, which represents that in each of all mathematical categories at 0.05 level the post result is higher than those of pre-test (F value is 5.19)

5. Conclusion

The five main course outcomes were mainly assessed through class tests, three midterm examination and final examination. Apart from that we can use their assignment, which is been given after completion of every chapter for the attainment of the learning outcomes. Assignments can act as homework and also one of the trustworthy tools to examine whether the students have understood the concept properly by making into the practice for analysing pharmaceutical equations and solving it easily. Surprisingly, the students with group-A and group-B have performed similar and have showed incredible improvement after the instructions given by the teacher in the post-test.

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Depreciation Capital in Financing Real Investments of Companies - Balance Sheet Law and Tax Law Regulations

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Abstract

The aim of this article is to analyse some of the significant disparities found in Polish tax and accounting regulations, which refer to depreciation. The article presents an important problem faced by Polish entrepreneurs. Both theoretical and empirical considerations are presented in the article. In the first section, based on the available Polish literature, the most important issues concerning the balance sheet and tax law in force in Poland were discussed, along with the differences between balance sheet and tax depreciation. In the second section, conducting a case study of the selected fixed asset at the “Rudna” Mining Plant, the differences between tax and balance sheet depreciation were presented. In practice, entrepreneurs must apply both tax and balance sheet provisions, keeping two types of records, which serve two different purposes. On one hand, the goal is to meet tax obligations imposed on the company, while on the other hand – the issue concerns activities that provide information to the company about its financial situation and growth opportunities.

Key words: *depreciation, accounting law, tax law*

Introduction

One of the sources of financing the investment activity of companies is capital obtained from depreciation deductions (write-offs), i.e. depreciation capital - funds resulting from the release of capital from depreciation deductions and those resulting from the lowering of the tax base [Iwin-Garzyńska, 2015; Iwin-Garzyńska, 2005; Iwin, 2003]. Depreciation deductions allow for collecting funds necessary for the subsequent reconstruction of the usability of consumed fixed assets as well as of intangible and legal assets. The literature presents various models of financing real investments from depreciation capital, such as: the Lohmann-Ruchti model [Lohmann, 1949; Ruchti, 1953; Nakano, 1964], the Neubert model [Neubert, 1951], the "Hotel" model, or the "Omnibus" model. These models differ from each other, but none of them negates that depreciation capital constitutes an active source of investment financing [Iwin-Garzyńska, 2005].

In considering depreciation, both accounting and tax regulations are essential. When analysing tax regulations and accounting regulations, a number of discrepancies can be observed, which also relate to depreciation and which, to some extent, hinder running a business [e.g. Yussof et al., 2014]. The aim of this article is to analyse some of the significant disparities found in Polish tax and

accounting regulations, which refer to depreciation. Both theoretical and empirical considerations are presented in the article. In the first section, based on the available Polish literature, the most important issues concerning the balance sheet and tax law in force in Poland were discussed, along with the differences between balance sheet and tax depreciation. In the second section, conducting a case study of the selected fixed asset at the “Rudna” Mining Plant (Polish: *Zakłady Górnicze "Rudna"*), the differences between tax and balance sheet depreciation were presented.

Balance sheet law and tax law

Accounting plays an important role in business entities, allowing to trace back the transactions and events that arise from the company’s activity. The main task of accounting is to develop and provide reliable and trustworthy information presenting the property and financial situation of a company.

The accounting principles are regulated under balance sheet law (Polish: *prawo bilansowe*), which is defined as the general legal regulations outlining the basic rules of accounting for business entities. The source of the balance sheet law in Poland is the Accounting Act [Accounting Act of 29 September 1994], constituting from 1 January 1995 the basic source of Polish balance sheet law.

In addition to balance sheet law, tax law also plays a key role in shaping the economic and financial situation of a company. Tax law comprises all legal principles governing the determination and collection of taxes. In Poland, tax law is a derivative of normative acts, mainly laws containing basic assumptions of specific taxes, such as the Corporate Income Tax Act [Corporate Income Tax Act of 15 February 1992]. Regulations of the Council of Ministers or of the Minister of Finance, along with the dispositions of the Minister of Finance, are a significant source of tax law in Poland. Importantly, these acts are executive.

A relationship between balance sheet and tax law will differ depending on the country. This is due to a number of reasons, including: economic situation, tradition, customs, and specific principles governing a country’s domestic economy. Having said that, three models of the relationship between these two laws can be distinguished [Józefczuk, 2005]:

- balance sheet law and tax law as two separate elements of the legal system in a domestic economy,
- balance sheet law consistent with tax law (uniform rules and regulations),
- an indirect model where balance sheet law and tax law are mutually autonomous but have separate regulations, introducing their own, different regulations only in certain areas.

In Poland, an intermediate model is currently practiced. Tax law and balance sheet law are two related but ultimately independent branches of Polish law. The purpose of tax law is to establish rigid and unambiguous rules that will ensure tax revenue for the state, where even the smallest gap or inaccuracy requires correction. In balance sheet law, meanwhile, the approach is different, meaning that the principle of materiality is allowed - certain simplifications may be admitted, provided that the circumstances of the business entity are presented thoroughly and clearly.

Balance sheet depreciation and tax depreciation

Both balance law and tax law use the concept of depreciation. However, a number of different definitions of depreciation can be found in the literature. In many studies, depreciation is defined as a financial reflection of the consumption of fixed assets, which is reflected in the calculation of own costs, and thus in the sphere of the company’s fiscal burden resulting from income taxation [Wöhe 1976].

As a rule, depreciation serves three main functions [Szczepański, Szyszko, 2007]:

- amortization function- adjustment of the initial value of a fixed asset, taking into account physical and economic consumption,

- cost function - charging business expenses with the amount of calculated depreciation,
- financial function - collecting cash funds for reproduction of fixed assets (reinvested deductions create the effect of expanding power, referred to as the accumulated depreciation effect in the Polish literature, and the Lohman-Ruchti effect - in the German literature) [Bierich, 1980].

In Poland, the balance sheet provisions contained in the Accounting Act and tax regulations contained in the Income Tax Act differ significantly when referring to depreciation. These differences concern primarily the initial value of assets subject to depreciation, the moment depreciation begins, methods of depreciation, and the scope of depreciable assets. The basic criterion for discrepancy is an asset's lifespan. Annex No. 1 to the Corporate Income Tax Act provides a list of depreciation rates, while the Act itself lists special circumstances allowing the application of accelerated depreciation. In the case of depreciation for accounting purposes, the regulations seem to allow more flexibility: "When determining the depreciation period and annual depreciation rate, an asset's useful life is taken into account" [art 32.2, Accounting Act of 29 September 1994] or: "The depreciable value of a tangible asset is distributed systematically over this asset's useful life" [Art. 50, International Accounting Standard 16]. In line with balance sheet law, entities should independently estimate how long they are going to use a given fixed asset and, determine its depreciation period on this basis.

The Polish Corporate Income Tax Act (abbreviated to UPDOP from Polish) lists both depreciable and non-depreciable assets. However, a prohibition for tax purposes does not necessarily mean that fixed assets are not depreciable under the Accounting Act (abbreviated to UoR from Polish).

Typical implications arising from possible discrepancies between tax and balance sheet law concern the following:

1. Commencement date of depreciation - depreciation of fixed assets is deducted
 - a) UPDOP - starting from the first day of the month following the month in which this asset was entered in the register,
 - b) UoR - no sooner than after accepting the fixed asset for use.
2. Depreciation methods:
 - a) UPDOP - three methods of making deductions are provided: straight-line, degressive and simplified. The chosen method is used to fully depreciate the fixed asset,
 - b) UoR - the choice of the method is left to the discretion of the entity, however, methods that do not correspond to the result indicated in the criteria set out in art. 32.2 of the same Act. According to international accounting standards, the value of depreciable individual fixed assets should be broken down systematically over the useful life period of each, while the applied depreciation method should reflect the economic benefits generated by the company in a reliable manner. The choice of the appropriate method of making depreciation deductions depends on the individual character and nature of the entity.
3. Frequency of change of depreciation method:
 - a) UPDOP - prohibits any changes; the method and rate of depreciation of particular fixed assets should take place before depreciation begins, and the chosen method should not change until the fixed asset is fully depreciated, thus making this method final for tax purposes,
 - b) UoR - allows, or even orders, periodic verification of depreciation rates, meaning it allows changing depreciation schemes (while maintaining the principle of continuity) whenever this is justified.
4. Depreciation rates and depreciation period:
 - a) UPDOP - specified in the schedule of depreciation rates annexed to tax acts. The list contains detailed regulations defining depreciation rates for particular groups of fixed assets and conditions on which the right to increase or decrease them depends,
 - b) UoR - an entity outlines these at its own discretion, taking into account the economic useful life of the fixed asset. The decision on the depreciation rates to be applied is the responsibility of the head of business unit. Balance sheet law does not prohibit tax rates. Tax rates can be applied when they ensure a deduction of the initial value of a fixed asset over its useful life. In this case, accounting depreciation will be equal to tax depreciation.

5. Change in depreciation rates:
 - a) UPDOP - the change may take place by increasing, using appropriate ratios, from the month following the month in which the circumstances justifying these changes occurred, and by decreasing, starting from the month, in which the funds were entered into the register or from the first month of each subsequent fiscal year,
 - b) UoR - the correctness of depreciation periods and rates used should be periodically verified by the entity, leading to a corresponding adjustment of depreciation deductions made in subsequent years.
6. Frequency of depreciation deductions:
 - a) UPDOP - entities can make deductions in equal instalments every month, in equal instalments every three months, or as a one-off payment at the end of the fiscal year,
 - b) UoR - deductions should be made systematically, providing a planned distribution of the value of a fixed asset for the expected period of its use.
7. Termination of depreciation:
 - a) UPDOP - until the end of the month in which: equalization of the sum of depreciation charges with the initial value of a fixed asset takes place; it was put into liquidation; it was sold or shortages were found,
 - b) UoR - no later than: equalization of depreciation or amortization deductions with the initial value of a fixed asset takes place; it was destined for liquidation; it was sold or shortages were found.
8. Depreciation of fixed assets used seasonally:
 - a) UPDOP - orders depreciation only during the period of their use,
 - b) UoR - orders to make depreciation deductions continuously in each reporting period;
9. Fixed assets included in the group 3-8 KŠT (excluding passenger vehicles) entered in the register by taxpayers starting business activity and small taxpayers:
 - a) UPDOP - depreciation deductions in the first year can be made up to an amount not exceeding the equivalent of EUR 50,000,
 - b) UoR - orders deductions to be made on general terms.
10. Method of depreciation of fixed assets with a low initial value:
 - a) UPDOP - sets the value of low-value fixed assets at no more than PLN 3,500. Expenses for the purchase of this asset can be included once in tax-deductible expenses, without the need to break it into instalments as depreciation deductions,
 - b) UoR - separates fixed assets with a low initial value, without expressing a specific amount. The division of fixed assets into low-value and other depends on the head of business unit.
11. Disclosure of fixed assets:
 - a) UPDOP - subject to depreciation from the month following the month, in which these funds were entered in the register,
 - b) UoR - depreciation starts no sooner than after the receipt of the fixed asset for use.
12. Depreciation of used or improved fixed assets:
 - a) UPDOP - depreciated according to individual rates,
 - b) UoR - not important in determining the annual depreciation rate whether a fixed asset is new, improved or used; instead, the period of economic usability is taken into account first.
13. Value from which depreciation deductions are made:
 - a) UPDOP - initial value determined in accordance with tax regulations,
 - b) UoR - initial value as entered in the accounting records.

Material and Methods

A case study of the “Rudna” Mining Plant, one of the largest and most modern underground copper mines in the world, was conducted to present the difference between tax and balance sheet

depreciation. The Plant has about 12,000 of registered fixed assets with a total value of approximately PLN 3 billion.

Due to the different legal bases, upon which depreciation deductions are made in a business unit, a distinction is made between:

1. Balance sheet depreciation (balance depreciation) – in which the straight-line method is used by the company.

Due to the continuous nature of copper production in the production line, straight-line depreciation is one that best reflects the mode of deriving economic benefits from the Plant's fixed assets. For the fixed assets which are new and used, accepted for the first time and disclosed, deductions are made on general terms by systematically distributing their initial value over a fixed period of useful life.

Balance sheet depreciation of fixed assets in the Plant is based on the company's accounting policy and the principles of International Financial Reporting Standards, in particular IAS 16 Property, plant and equipment [International Accounting Standard 16], IAS 36 Impairment of assets [International Accounting Standard 36], IFRS 5 Non-current assets held for sale and discontinued operations [International Financial Reporting Standard 5].

2. Tax depreciation – results from the principles and methods of depreciation outlined in tax regulations, on the basis of which – in order to determine the correct tax base – depreciation charges are classified as tax deductible and non-deductible expenses.

Tax depreciation rules are regulated in the Polish Corporate Income Tax Act. As part of the freedom allowed by these rules, they are applied in a way that maximizes the property benefits of the Plant. In particular, the degressive method of tax depreciation and all possible legitimate gateways for increased rates are used to the largest extent possible.

A comparative analysis of balance sheet and tax depreciation was performed on the example of a fixed asset in the form of a pump set with a WSP pump. The asset was entered in the register on December 23, 2014, and its initial value was PLN 376,928,57 [Twardzicka, 2015].

Results and Discussion

Balance sheet depreciation

The fixed asset is depreciated using the straight-line method, the depreciation rate is 10% and it is accrued in the month when the asset is put into effect, i.e. from December 2014.

Annual deduction: $\text{PLN } 376,928,57 * 10\% = \text{PLN } 37,692.86$

Monthly deduction: $\text{PLN } 37,692.86 / 12 \text{ months} = \text{PLN } 3,114.07$

Initial value: $\text{PLN } 376,928,57 / \text{Annual deduction: } \text{PLN } 37,692.86 = 10 \text{ years}$

Amount of deductions by year:

2014	PLN 3.141,07 (for December 2014)
2015	PLN 37.692,85
2016	PLN 37.692,85
2017	PLN 37.692,85
2018	PLN 37.692,85
2019	PLN 37.692,85
2020	PLN 37.692,85
2021	PLN 37.692,85
2022	PLN 37.692,85
2023	PLN 37.692,85
2024	PLN 34.551,79 (January - November)
Total:	PLN 376.928,57

Depreciation is terminated when the deductions are equated with the initial value, i.e. the fixed asset will be depreciated over 10 years.

Tax depreciation

The fixed asset is depreciated using the degressive method, the depreciation rate is 14%, the coefficient is 2.0 and is calculated in the month following the month when the fixed asset was put into effect, i.e. from January 2015.

Annual deduction: PLN 376.928,57 * 28% (14% * 2,0) = PLN 105.540

Monthly deduction: PLN 105.540 / 12 months = PLN 8.795

Depreciation deduction written off as expenses for 2015

Annual deduction: PLN 376.928,57 * 28% (14% * 2,0) = PLN 105.540

Depreciation deduction written off as expenses for 2016

Deduction base:

PLN 376.928,57 – PLN 105.540 (depreciation for 2015) = PLN 271.388,57

Annual deduction: PLN 271.388,57 * 28% = PLN 75.988,80

Depreciation deduction written off as expenses for 2017

Deduction base:

PLN 376.928,57 - PLN 105.540 (depreciation for 2015) - PLN 75.988,80 (for 2016) = PLN 195 399,77

Annual deduction: PLN 195 399,77 * 28% = PLN 54.711,94

Depreciation deduction written off as expenses for 2018

- Annual deduction by degressive depreciation:

Deduction base:

PLN 376.928,57 - PLN 105.540 (depreciation for 2015) - PLN 75.988,80 (for 2016) - PLN 54.711,94 (for 2017) = PLN 140.687,83

Annual deduction: PLN 140.687,83 * 28% = PLN 39.392,59

- Annual deduction by straight-line depreciation:

Deduction base: PLN 376.928,57

Annual deduction: PLN 376.928,57 * 14% = PLN 52.770

Monthly deduction: PLN 52.770 / 12 months = PLN 4.397,50

PLN 101.295,24 – PLN 52.770 = PLN 48.525

Amount of deductions by year:

2015	28% * PLN 376.928,57	PLN 105.540,00
2016	28% * (PLN 376.928,57 - PLN 105.540)	PLN 75.988,80
2017	28% * (PLN 376.928,57 - PLN 181.528,80)	PLN 54.711,94
2018	28% * (PLN 376.928,57 - PLN 236.240,76)	PLN 39.392,59
	<than 14% * PLN 376.928,57	PLN 52.770,00
2019	14% * (PLN 376.928,57 - PLN 289.010,76)	PLN 52.770,00
2020	14% * (PLN 376.928,57 - PLN 341.780,76)	PLN 35.147,81
	PLN 35.147,81 / PLN 4.397,50 (monthly deduction) = 8 months	
	that is, (January-July – PLN 4.397,50 per month; August – PLN 4.365,31)	
Total:		PLN 376.928,57

Balance sheet depreciation was carried out using the straight-line method, the amount of deductions was distributed over the period of 10 years. Deductions were made in equal amounts until full depreciation of a fixed asset.

Tax depreciation was carried out using the degressive method, the value of deductions decreases over time. Due to the fact that the depreciation rate is 14% in tax depreciation and 10% in balance sheet depreciation, a higher ratio is applied.

In 2018, the value of degressive depreciation (PLN 39,392.59) was lower than the value of straight-line depreciation (PLN 52,770), therefore the straight-line method was used to fully depreciate the fixed asset. The fixed asset was depreciated for the purposes of the corporate income tax for a period of 5 years and 8 months.

Conclusions

Put simply, depreciation is a distribution over time of costs associated with the introduction of certain assets to the company. In Poland, both tax law and balance sheet law use the concept of depreciation. However, it should be noted that these are two separate and independent branches of Polish law. When analysing tax and accounting regulations, a number of discrepancies can be observed, which, to a certain extent, make it difficult to run a business. These discrepancies also apply to depreciation. Thus, on one hand, tax law lists depreciation rates for individual depreciable assets, providing a list specific circumstances that allow the application of accelerated depreciation. In the case of depreciation for accounting purposes, on the other hand, the regulations are more flexible, taking into account a fixed asset's useful life or systematically distributing the depreciable value of individual assets over their lifespan.

The article presents an important problem faced by Polish entrepreneurs. The case study indicates that there may be differences in the amount and period of asset depreciation. In practice, entrepreneurs must apply both tax and balance sheet provisions, keeping two types of records, which serve two different purposes. On one hand, the goal is to meet tax obligations imposed on the company, while on the other hand – the issue concerns activities that provide information to the company about its financial situation and growth opportunities.

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Customised ESL Software Assisted Second Language Acquisition: a Quantitative Report

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Abstract

It is difficult to imagine a modern day classroom without technological support, more so, when it comes to ESL- English as a Second Language classrooms. This research paper validates educational experiences delivered with the ESL Software which otherwise would have not been possible as it addresses the challenges faced in a non-technological classroom. The detailed study over a period of a year of ESL software for language enhancement highlights three major areas of teaching: learning process, evaluation and assessment. The software enables to deliver differentiated instruction using Bloom's Taxonomy and encourages self-paced learning while reduces logistical issues and one on one evaluation of speaking responses resulting into cost reduction and saving time. The recorded response of Listening, Speaking, Reading and Writing (LSRW tasks) allows assessment at convenience with reduced human effort. Overall, from the review of the study conducted, the author deduces that embedding ESL software is an efficient and effective tool for Second Language Acquisition.

Key words: *Bloom's Taxonomy, Differentiated Instructions, ESL Software, Second Language Acquisition*

1. Introduction

21st Century globalisation and technological advancement demands cross cultural interaction and adaptability like never before, resulting into enhancement of communication skills, particularly acquisition of the global language - English. It is totally unimaginable to survive without the life blood of communication in present diversified and interconnected world. Modern day demands a thorough grip on English Language owing to wide spread business world. Hence, one needs to be fully equipped with one's linguistic skills to conduct and expand business nationally and globally. It is nearly impossible to conduct business using a single language when local immigration also demands use of global language. Thus, the focus on language education in the 21st Century is no longer on isolated grammar, memorization, rote learning, but rather using language and cultural knowledge as a means to communicate and connect to others around the globe [Eaton, 2010]. Traditional notions of education are giving way to newer, more innovative ways of thinking about how we learn, teach and acquire knowledge. The American Council on the Teaching of Foreign Language [ACTEFL, 2013] noted that technology has been used to both assist and enhance language learning. It is now rare to find a language class that does not use some form of technology.

The powerful impact of technology and communication makes it imperative to develop a weaponry of English as Second Language in the armoury of 21st Century skill set, by enhancing all four functional skills of Listening, Speaking, Reading and Writing - (LSRW) so as to survive and excel in the modern competing world. Additionally, second language not only boosts confidence but presents an opportunity to widen the perspective and value cross cultural diversity. Scientific research has proved that learning second language stimulates brain and builds creativity [1]. As a consequence, it brings a sense of empowerment when one is fully equipped with English Language. While there are numerous ways of teaching English as a Second Language (ESL) the one weaving technological support brings the optimum result by engaging curious and technologically inclined students. The uses of technology not only help learner master the functional skills but also generates excitement and thrill which hooks the learners for a longer span. As per the study conducted by Xiao and Jones [1995], it is outlined that proper application of technology can be engaging and can bring desired results.

On the other hand, Winkle and Goertler [2008] points out the limitation of the technological use in relation with the ownership and accessibility, and student's competency to perform computer-based tasks. The purpose of this study is to reveal the need of customised ESL Software and how it can benefit non-native speakers acquire the second language optimally. Also, to highlight how ESL Software can reduce logistical issues in teaching-learning process and during assessment and evaluation process.

Among various existing theoretical, Krashen's [1982] framework focused extensively the correlation between comprehensive input and language acquisition of ESL learners. The outlined Hypothesis by Krashen [1982] highlighted that second language is acquired only when the learners receive input that is above their current knowledge level. Besides, it is also indicated by him that ESL learner can give comprehensive input only when the sentiments like anxiety and boredom is much low. The impact of affective filter is much lesser when one is willing to learn.

For ESL learners to be proficient in the target language, the language acquisition process should not only emphasize comprehensive input, but the input should also be rich: "the presentation of this input, moreover, should be done in a way that does not put acquirer 'on the defensive'," [Krashen, 1982, p. 125]. The 'defensive' learner here indicates the impact of affective filter and the block thus created which hinders the output and has a bad impact on self-esteem, which further hampers second language acquisition.

Krashen [1982] research has indicated the need to encouraging learning environment through subsequent studies. Thus, weaving technology in providing second language acquisition will instigate learning urge and positivity in ESL learners. According to Echverria, Vogt and Short [2013], scaffolding and differentiated instructions play a vital role along with Krashen [1982]'s comprehensive theory to attain success. The use of ESL Software comes handy to motivate a non-native speaker which further supports differentiated instructions in all four functional skills. The audios used to acquaint the learners help them to expose to various cultures and thus bridge the gap of cultural diversity. Such an attempt not only reduces cultural diversity but also "can transform any curriculum to comfort racism, sexism, classism, ethnocentrism, disability, or xenophobia." [Clayton, 2003, p. 179] These can further foster teamwork and group learning as well.

2. Research Methodology

In order to improve the language acquisition of ESL learners, one needs to understand the background knowledge of the learners and the ways, which can bring optimum results. Each learner is unique and has a different style of learning. Besides, learning process too has various stages, referring to various developmental stages extensively studied by Vygotsky [1931] and Piaget [1962] helps us portray a better picture of language acquisition process. Considering these theories it was decided to conduct Diagnostic Test immediately after the enrolment in the program, this enables us to know and learn the current background knowledge of the learners, which further helps in designing the learning interventions for various levels and also by using differentiated instructions in the class. The

diagnostic test also focuses on all four functional skills (LSRW) listening, speaking, reading and writing. Along with the utility and social context of the inputs (questions) based on theories of Second Language Acquisition by Krashen [1982] and differentiated instructions embedded in Echevarria, Vogt, and Short's [2013] SIOP (Sheltered Instruction Observation Protocol) model, emphasizes a different type of social interactions.

The weaving of differentiated instructions along with technology excites learners to get hooked to the resources and materials, which expedites the learning process. The diagnostic test conducted helps us study and learn the present level, which further works as a beacon to navigate the learning journey of non-native speakers. This further helps us in designing various active learning practices and using appropriate audio-visuals, PPTs, podcasts, sample emails, essays etc. As these functional skills - Receptive (Reading & Listening) and Productive (Speaking and Writing) can further be bifurcated into sub skills of each; we focus on various scaffolding activities to strengthen each sub-skill. Inspired by the standardised test formats we also have Rubric Based Evaluations, which focuses on details of each sub-skill. For example, reading involves paraphrasing, locating details, reading for gist and global reading. Similarly, writing involves email writing and essay writing to improve the written correspondence, listening involves pre-listening, while listening and post-listening activities to understand and comprehend any foreign accent. The speaking focuses on conversations in form of role-plays, telephonic conversations, speeches and informative audios.

After the diagnostic test and providing appropriate inputs embedding differentiated instructions using ESL Software, learners get maximum opportunities to enhance all four functional skills.

2.1 ESL Software

2.1.1 Teaching Learning Process

Inspired by standardised tests format for English Language, a need based software was designed by a team of students with guidance and support of IT Head, RK University Prof. Kamlesh Patel to meet the challenges of traditional teaching practices of Second Language Acquisition.

The software enables the learners to read, write using a computer system and listen and speak using headphones. Talking about the reading skill enhancement the learner is able to skim the lengthy paragraph and scanning resources like Travel Brochure, Flight Schedule and other detailed information to answer related multiple choice questions by locating specific information required. Next, students write the responses to email and descriptive essays asked based on the rubrics explained. The rubrics used here is also focusing on all parameters of develop language fully. While listening is learnt through repeated interventions of audios and pausing for comprehending the pronunciation and accent, speaking is based on question displayed on the screen, students develop the script to be recorded and respond accordingly. Unlike, a traditional class where students do not get enough repeated interventions of listening over and over again to comprehend the audio, ESL Software allows and enables learner to listen and understand at their pace and helps them focus on pronunciation, accent and developing language. Also, the only accent exposed to the learners is that of a facilitator and not varied global accents from native countries. This is the major difference in a traditional class without using technological support. The facilitator may have regional accent, which can hamper development of learner's language.

2.1.2 Assessment Process

ESL Assessment maintains all the necessary protocols, which is required to conduct any exam. Beginning from keeping the anonymity of the candidates to securing the students' answers and responses and restricting the copying of answers to time management everything is well accurately handled during the assessment. The exam paper is designed in a specific excel file which can be used by the candidates and the evaluator. The randomisation of the modules listening, speaking, reading and writing to all the candidates reduces the chances of copying to negligible. The two timers in the

ESL Software allow managing the module and the overall exam in stipulated time period. The easy and simple application of the software makes it very popular amongst students to use and appear for exam. Unlike pen and paper exam in traditional approach, students feel relaxed and excited to appear for the exam.

2.1.3 Evaluation Process

The entire process from setting a traditional paper to correction of the answer sheets is very tiring and generates boredom while exams conducted using ESL software is easy to set the paper and evaluate as well. The major challenge in a traditional class is to test speaking. Generally, the speaking test is conducted one to one and this becomes cumbersome and tiring for a facilitator. Also, enough time is not provided to the learner to prove their language competency and hence it affects their performance and self-esteem badly. While, ESL exams conducted using ESL software allows capturing and recording the speech responses of the students within few minutes designated and this serves as a big relief to the facilitator. This is one of the biggest advantages of using ESL software, which reduces all logistical issues and human hours.

Another huge advantage of using ESL software is that all answers are recorded, saved and secured in the server for any future reference and thus helps facilitator to review answers in the class for a comparative study and for learner's benefit. No less the exam gets over, facilitator ensures that everyone's responses are perfectly saved and secured through a feature that confirms the submission of all modules and tasks in the exam. Also as two of the modules Reading and Listening are auto evaluated, the facilitator needs to evaluate only the rest two, i.e. Speaking and Writing, which are evaluated on the basis of rubrics. Thus, using ESL software for teaching-learning process, conduction of exams and assessment is far more beneficial in comparison to a traditional class.

3. Key Findings

3.1 Student Feedback and Attendance Records

As per our observation and the attendance record it clearly suggests that student's interest in the ESL sessions and their engaging participation indicates the practice is enjoyed and appreciated thoroughly.

3.2 Overall Result Analysis of ESL

Based on the experiment conducted with students of engineering, the overall result analysis indicates the performance of students have improved from English Language Diagnostic Test (ELDT) to Continuous Internal Examination (CIE) to Semester End Exam (SEE) as shown below in Fig. 1. Series 1 indicates ELDT, Series 2 indicates CIE and Series 3 indicate SEE marks.

Moreover, the individual skill assessment of the students also reveals positive result as mentioned in the graph below (Fig. 2): Again series 1 signifies English Language Diagnostic Test ELDT - (yellow line), Series 2 signifies Continuous Internal Exam CIE - (Blue line) and Series 3 signify Semester End Exam SEE (Red Line) marks.

Figure 2 describes skill enhancement in all three exams. The line graph in all the above skill wise charts indicate that performance in Reading, Listening, Speaking and Writing has improved from Diagnostic Test (Yellow Line) to Internal Exam (Blue line) and finally to Semester End Exam (Red Line). Thus, the above findings conclude that weaving technology in English as Second Language Acquisition, in its teaching learning process, assessment and evaluation brings positive result and attains the goal of language enhancement.

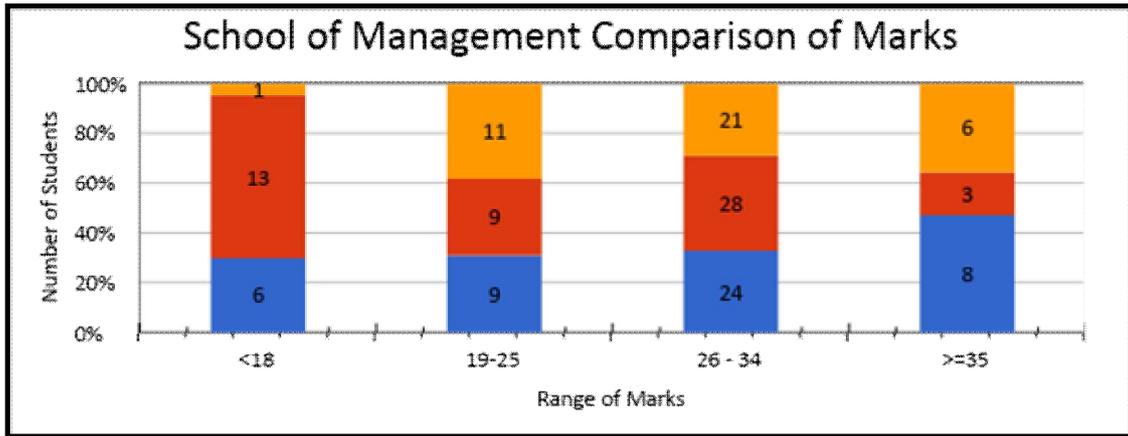


Fig. 1

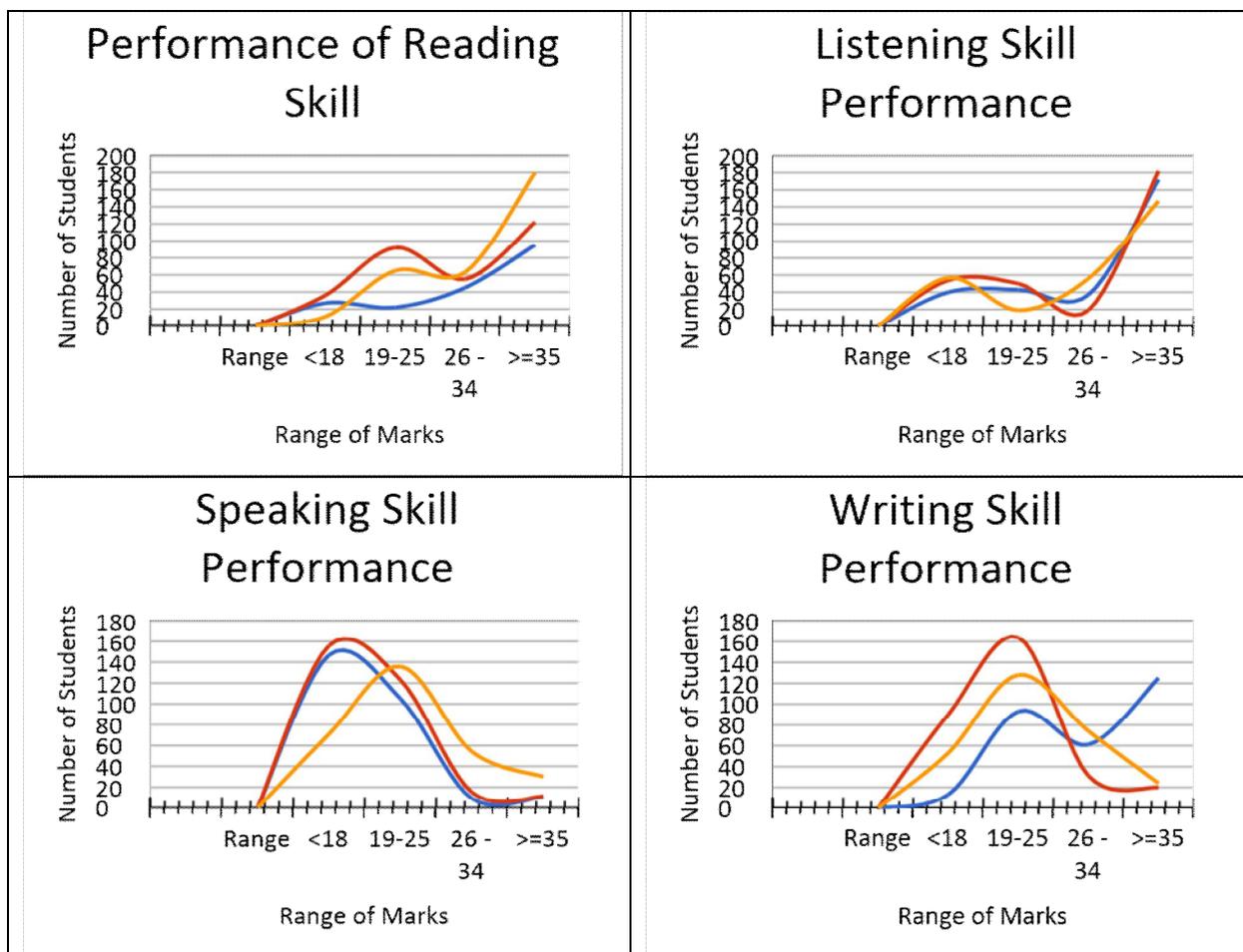


Fig. 2

4. Limitations of Technology

Although the findings from the focus group of students enjoyed the ESL classes, however, over enthusiasm may result into negativity and lack of genuine efforts from students. UNESCO, 2012 observed that learners enjoy physical face-to-face interactions rather than communicating with the computers. Also, rubric based evaluations may vary from person to person as it may not be that accurate and can be dependent on individual’s comprehension ability.

5. Conclusions

In a fast paced changing world it is also crucial how we learn and not just what we learn. Similarly, teaching learning process is also changing for better to enhance technical and non-technical skills to succeed in life. Also, the authoritarian approach of a teacher is gently changing to supportive and collaborative approach of teaching. Today's generation is hungry and inclined towards technology and hence embedding it in language learning class motivates students to be inclined towards second language acquisition. The curiosity quotient of today's learners is very high and learners are eager to know and learn about the culture and the world around them.

Present day language classroom is far different from that of the previous centuries. The focus from grammar, memorization and rote learning has shifted to skill enhancement with lot of practical and real life interventions. Physical boundaries are no more any barriers to learn and reach out the world at large by using technology and cultural skills to bridge the connect to the world outside.

Modern day classroom is conceptualised as learner- centred more collaborative and technologically inclined. The empowerment of students is the result of real time communication using technology.

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Use of Hot Potatoes Software for Language Teaching

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Abstract

In the digital world also known as technological world, where everything is under control of the internet and brand new technological inventions, it is difficult to undermine their contribution to foreign language teaching. It's a common misconception that mixing education and technology individualizes and singles out students in classroom. Every facet of our daily lives is in one way or another saturated by the use of technology tools, which have proven to enrich and make our lives a little easier every day. Tools such as videos, podcasts, worksheet banks, special teaching platforms, applications, and websites, alongside with technological devices, are extremely beneficial. Technological advancements have made everything a little better for citizens of the modern age.

Key words: *hot potatoes, software, application, language*

1. Introduction

The educational sector is no exception here; technology has been exponentially beneficial for language learning, teaching and overall development [Maszkowska].

Maszkowska said that second language learning such as foreign languages is a process as complex as second language teaching whether it is for primary levels, secondary level or tertiary level, and various factors contribute to and combine together in order to achieve the success of this endeavour. To result in a favourable outcome, teachers have to devote a lot of time and effort to determine the most satisfactory, suitable and effective methods of teaching. Not only everyday reality is affected by the new technology, but also the development of language skills started to depend on it. As the number of English learners is ever increasing, fortunately, more and more modern tools, i.e. Web tools such as Kahoot, Edmodo, Wiki, Nicenet, Podcast, Flubaroo etc.; social tools like WhatsApp, Hike, Telegram, Instagram, Facebook, and Twitter; software such as Audacity, Hot Potatoes, Movie Maker and technology devices are implemented into the process of teaching. Currently, teachers tend to use tools such as videos, podcasts, Nicenet, wiki, audios, Kahoot, Edmodo, Flubaroo, worksheet banks, e-learning platforms, applications, and websites, accessible through electronic devices such as personal computers, laptops or smart phones. These inventions facilitate classroom environment and diversify learning activities.

Further, if we look at the history, technological devices, tools, applications were coined or founded in the past decay and if we look the present scenario, we come to know that technological tools are still not brought in the classroom for language teaching. Still they are away from the classroom and they feel like they are orphan though they are founded. Nobody tries to bring it in the classroom. On other hand, teachers also face problems while teaching and engaging whole class.

Today's world is known for technological advancement. Technology offers new ways for language teaching. So it is Hot Potato Software, which is one of the most powerful software among other softwares, which helps the teachers to teach language. The Hot Potatoes suite includes six applications, enabling you to create interactive multiple-choice, short-answer, jumbled-sentence, crossword, matching/ordering and gap-fill exercises for the World Wide Web. Hot Potatoes is freeware, and you may use it for any purpose or project you like. It is not open-source. The Java version provides all the features found in the windows version, except: you can't upload to hotpotatoes.net and you can't export a SCORM object from Java Hot Potatoes

Hence, the present paper entitles, '*Use of Hot Potatoes Software for Language Teaching*' focuses on how the new technology provides new ways to teach a language. How Hot Potato Software is helpful for teachers to teach a language than the old talk and chalk method. One of the intensions behind writing this paper is the make aware about available tools, devices, applications for language teaching to the teachers and here the concept of Hot Potatoes, importance of Hot potatoes, research question, use of applications, i.e. JMatch used to create matching exercises, this means that a list of items appears on one side, and each one must be matched up to an item on the other side, JMix used to make jumble exercises and can be jumbled the words in a sentence, or the letters in a word and it has two output formats: standard, and drag-drop, JCross used to make crossword exercises. There are two steps to making an exercise: first enter your letters in the grid, then add the clues. To enter letters in the grid, click on a square and type a letter, JCloze used to make gap-fill or cloze exercises, JQuiz used for making question-based exercises; each quiz can consist of an unlimited number of questions. There are four basic question types such as Multi choice question, multi select question, hybrid questions and short answer, and JMasher a different kind of application from the others in the Hot Potatoes suite. It's intended to help you make larger units of materials, linked together. The Masher is also used to upload files in teaching; advantages of applications are covered in the present paper.

"...Technology is not a panacea or a magic bullet that suddenly transforms all learning. The effectiveness of educational technology depends on how it is employed to meet educational goals for particular kinds of students in specific language learning environments...." [Oxford and others, 1998: 13]. Computer has undoubtedly made a remarkable contribution in the teaching of subjects. It has offered valuable service to the learners and provided them with a powerful motivating force for a productive study. The rapid development of computer technology together with the use of computers by linguists and literary researchers have paved the way for introducing computer in language teaching and learning. With the advent of Internet and multimedia, studies in recent years have shown an explosion of interest in using computers for foreign language teaching and learning. Computer technology has become an important tool in the teaching and learning process. The advent of new technologies in learning process is always exciting. They add new dimensions to the class and spark students to a higher level of motivation and achievement. Computer-assisted Language Learning (CALL) gives some impetus to both the teacher and the student. For the former, it makes the course design easier, and for the latter, it creates numerous possibilities for active interaction and offers larger horizons to be directly involved in new concepts and ways of thinking [Panourgia, n.d].

In the second half of the 20th century, education technologies were one of the most developed areas in the world. Computers, which were introduced at school life in the late 1950s in developed countries, have entered schools in all parts of the world. Today, they have become more powerful, faster, easier to use, more convenient and cheaper, and their capacity to store data has increased tremendously. Equipment such as hard disks, CD ROMs, laser disks and printers used with computers has also developed rapidly. Using these, a computer program can handle sound, pictures and video [Gündüz, 2005]. Computers have decreased in price dramatically over the last ten years. At the same time, they have become much more powerful, yet smaller in size, more adaptable, more flexible, and easier to use. As a result, schools and governments have devoted resources to computer literacy, or knowledge about computers and computing. Today, we are living in an era where changes occur very rapidly. The nature and direction of changes taking place around the world, and more precisely within the educational system, reinforce the need for a new approach based mainly on the recent technologies

of only the last few decades. Such an approach is CALL (Computer Assisted Language Learning) and it describes the use of a computer as part of a language course.

2. What Hot Potatoes is

Hot Potatoes is shareware from Half-Baked Software, which is based at the University of Victoria in Canada. It is a program that allows you to make six different types of self-test exercises. These exercises can also quite easily be imported into an LMS like Moodle to be used for assessment of learning content [Anonymous, n.d.].

Hot Potatoes was originally meant to create language exercises, and some Hot Potatoes exercises (like jumbled sentence) have little use otherwise. However, most exercises can be used for any subject [Anonymous, n.d.].

Hot Potatoes is shareware. That means you can freely download the program from the Internet. The Hot Potatoes suite is a set of six authoring tools, created by the Research and Development team at the University of Victoria Humanities Computing and Media Centre. They enable you to create interactive Web-based exercises of several basic types. The exercises are standard Web pages using XHTML 1.1 code for display, and JavaScript (ECMAScript) for interactivity. These core W3C standards are supported by all good modern browsers, including Internet Explorer 6+, Mozilla 1.2+, Phoenix, Safari, and many others. The authoring tools will also handle Unicode, so you can create exercises in virtually any language, or in a mixture of languages [Anonymous, n.d.].

You don't need to know anything about XHTML or JavaScript to use the programs. All you need to do is to enter your data texts, questions, answers etc. and the programs will create the Web pages for you. Then you can post them on your Web site. However, the programs are designed so that almost every aspect of the pages can be customized, so if you do know HTML or JavaScript code, you can make almost any change you want to the way the exercises work or to the format of the Web pages [Anonymous, n.d.].

Hot Potatoes v. 6.3 is freeware. You are welcome to use it for any project you like, for as long as you like. You will be prompted to register when you start the application. This process simply asks for your name, and stores it in the system registry; your name will be inserted into exercises you create with Hot Potatoes, identifying you as the author of the exercises. It will not be sent to us or to anyone else [Anonymous, n.d.].

3. General description of the program

General description of the program Exercises are made in two steps. First, you create the so-called 'data file' which has a Hot Potato XML extension (like .jcw or .jcl). This file is useless without the Hot Potatoes program but is used to edit the exercises later. The exercises are exported to web-based exercises (which have the HTML extension .htm) which can be displayed anywhere on the Web. Note that you CANNOT RELOAD THE WEB PAGES INTO THE PROGRAM, so it is important to save your data files [Anonymous, n.d.].

Before creating a Hot Potato exercise, you need to think about what you want to achieve with it. Do you want students to learn vocabulary items? Then the gap text (JCloze) or the short answer quiz (JQuiz) are the best choices. If you wish to test text comprehension, the multiple choice (JBC) or matching (JMatch) exercises are more suitable [Anonymous, n.d.].

4. Use of Applications of Hot Potatoes for Language Teaching and Learning

The Hot Potatoes software offers different applications, which can be used for language teaching and learning. Here is the brief and accurate explanation how it can be used and how it is useful for teachers and students for language teaching and learning respectively.

a) JQuiz

JQuiz is a tool for making question-based exercises. Each quiz can consist of an unlimited number of questions. There are four basic question types.

In multiple-choice questions, the student chooses an answer by clicking on a button. If the answer is correct, the button caption will change to a smiley face :-), and if it's wrong, it will change to an X (you can configure these bits of text in the configuration screen). In either case, the student will see feedback specific to that answer, explaining why it's right or wrong (assuming you write the feedback when you make the exercise!). If the answer is wrong, the student can continue choosing answers until a correct answer is selected. The score for each question is based on the number of tries taken to get a correct answer. Once a correct answer is chosen, the scoring is "frozen", but the student can still click on buttons to see the feedback for other answers without penalty.

In short-answer questions, the students has to type the answer into a text box on the page, and press a Check button to see if it is correct. The page will try to match the student's answer to a list of correct or incorrect answers you have defined. If a match is found, the feedback for that answer will be shown. If not, then the page will try to find the nearest match among the specified correct answers, and signal to the student, which parts of their answer are right and which parts are wrong. The score for each question is based on the number of attempts the student makes before getting a correct answer. You can also include a Hint button, which will give the student one letter of the answer; using the Hint button incurs a penalty on the score [Anonymous, n.d.].

A hybrid question is a combination of a multiple-choice question and a short-answer question. In this type of question, the student is first presented with a text box and asked to type the answer. However, if the student fails to get the answer right after a specified number of tries (which you can configure in the configuration screen), the question changes to a multiple-choice question to make it easier [Anonymous, n.d.].

Finally, a multi-select question asks the student to select several of a specific set of items. The idea here is that the student must select all the correct items, and not select all the wrong items. This type of question might take the format "Which of the following are nouns?", followed by a list of words. The student must check all the nouns, but not check any answers, which are not nouns, then press a Check button. If the answer is not completely correct, the student will see a readout of the number of correct choices, and one piece of feedback; this would be the feedback from the first item in the list which was either selected when it shouldn't be selected, or not selected when it should be selected [Anonymous, n.d.].

To try out all these question types, go to this example quiz. For an example of how to make a quiz in JQuiz, check out the "Three Steps" link below. For more information on how JQuiz works, check out the Help file -- just start JQuiz and press the F1 key [Anonymous, n.d.].

b) JCloze

JCloze is used to make gap-fill or cloze exercises. The idea of a gap-fill exercise is that the student completes all the answers before checking; in other words, it's a holistic exercise. When all the answers have been entered, the student presses the Check button to mark the answers. Correct answers will be inserted into the text; any incorrect answers will be left in textboxes, so that they can be corrected. When the student checks an answer that is not completely correct, a penalty is incurred, so the score depends on the number of checks required before the answer is completely correct [Anonymous, n.d.].

In a JCloze exercise, you can include a Hint button, which will give the student one free letter of the answer he or she is currently working on (based on where the cursor is). You can also include a specific clue for each gap. Using the Hint or Clue buttons [Anonymous, n.d.].

c) JMatch

JMatch is used to create matching exercises. Basically, this means that a list of items appears on one side, and each one must be matched up to an item on the other side.

JMatch output comes in two types: standard and drag-drop. The standard output uses a drop-down list of items on the right. This is the format to use when you have more than seven or eight items, and the items on the right are only text; if you have only a few items, and especially if the items are graphics, you may want to use the drag-drop format. Don't use the drag-drop format if you have more than eight items, because scrolling on the page will make dragging and dropping difficult [Anonymous, n.d.].

d) JMix

JMix is used to make jumble exercises. You can jumble the words in a sentence, or the letters in a word. Like JMatch, JMix has two output formats: **standard**, and **drag-drop**. For examples, see this standard exercise and this drag-drop exercise [Anonymous, n.d.].

e) JCross

JCross is used to make crossword exercises. There are two steps to making an exercise: first enter your letters in the grid, then add the clues. To enter letters in the grid, click on a square and type a letter [Anonymous, n.d.].

f) The Masher

The Masher is a different kind of application from the others in the Hot Potatoes suite. It's intended to help you make larger units of materials, linked together. The Masher is also used to upload files, which are not Hot Potatoes exercises to the www.hotpotatoes.net server.

The Masher has its own tutorial, click on Help / Tutorial in the Masher program, or go there now, and a detailed Help file with full instructions.

Advantages of Applications

- Multiple choice questions can be used for any subject. They are most effective when they give good feedback to your learners (why is an answer wrong/correct) [Anonymous, n.d.].
- Short-answer Quiz questions are good in combination with sound clips, definitions or gap sentences, but keep in mind that there can be only one answer (and if there are more correct answers we must include all of them!). There for translation exercises are not a good choice, because there are often many possible correct translations. Also, if spelling is not crucial to your subject, you'll find that you will have to think of all the possible ways learners can spell a word – a daunting task! [Anonymous, n.d.].
- Crosswords bring a playful element into your study material, but they need to contribute something (like testing knowledge or having learners train certain skills). The quality of the clues determines much of the success [Anonymous, n.d.].
- Matching exercises can be used in any situation where understanding of a subject can be expressed in the combination of two objects or phrases. It is possible to combine for example pictures with explanations (provided the pictures are small and the explanations not too long. The drag and drop version (DHTML) looks nice but works only with certain browsers!) [Anonymous, n.d.].

- Cloze texts can be used for any type of fill in exercises, with or without wordlist at the top and with or without extra clues given. Learners are trained in understanding as well as spelling. Cloze texts must not be too long (especially not if they have a wordlist at the top; avoid too much scrolling!) [Anonymous, n.d.].
- The jumbled sentence exercise is suitable for any type of activity in which the learner has to order something (e.g. the lines of a poem) [Anonymous, n.d.].

5. Conclusion

Hot Potatoes Software has important potential for English language teaching and learning. If used properly with clear educational objectives, it can interest and motivate learners of English. It can increase information access to the learner, provide flexibility to instruction and thereby better serve the individual's learning pace, cognitive style and learning strategies. It allows learners to control their own learning process and progress. Using effective and suitable software's applications, it can provide communicative meaningful language learning environments. Software can offer a balance of controlled practice and free communicative expression to the learners, including immediate feedback. In the future, with the advance of computer technologies, it is expected that different softwares will be able to absorb some teaching functions. However, despite greater user friendliness, and effectiveness, Hot Potatoes and other softwares will never replace the teacher. Like other new technologies, Hot Potatoes is not a magic solution to language teaching. The effectiveness of Hot Potatoes relies on how Hot Potatoes is utilized to meet language learning goals for individualized learners in specific educational settings.

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The manuscript of every single contribution has to be submitted:

1. On a separate DS HD, IBM PC compatible formatted 3.5" 1.44 MB diskette. The text must be written in MS Word 97, MS Word 2000 or some other compatible editors. The article must contain all tables, graphs and pictures in common software formats, arranged to appropriate positions in the article, in the final size and form.
2. Simultaneously, you are requested to enclose two additional physical copies, single side-printed in "camera ready" quality. Printed manuscripts may be in some cases directly copied or scanned for final journal printing. Pictures will be printed in black and white. No changes will be performed in the Editorial Office. The page heads and foots with the page numbers will be added by the Editorial Office during printing, they should not be printed in manuscripts.
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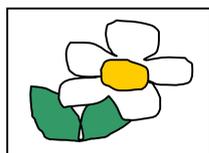


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[1] Author B.A.von, Writer J.K.L.: **Article name.** *Our J Transactions*, 1999, **127**, 122-136

[2] Van Loon J.C.: *Selected methods of trace metals analysis.* J. Wiley, New York, 1991

[3] * **note:** *The citations and notes are numbered in the same fashion and may be mutually mixed. Also you can add all notes collected at the end of the citation list, continuing it's numbering.*