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THE IMPLEMENTATION PROCESS OF A COMPUTERIZED PADAGOGICAL MANAGEMENT SYSTEM IN ARAB AND JEWISH SCHOOLS IN ISRAEL

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Abstract

This article discusses an online pedagogical management system, which has been integrated in approximately 500 schools in Israel. The Computerized Pedagogical Management System was developed in 2006 in the aim of utilizing the computer and Internet infrastructure to process, report and use real time relevant data to carry out management tasks and data presentation by school principals and staff. The aim of the system is to improve school effectiveness and to contribute to change and efficiency among school management and the educational and administrative staff. The ultimate goal of implementing technological management in schools is to increase these tools in both Jewish and Arab schools in Israel.
The interactions are conducted through two main channels:

1. Data entered into the system on a daily basis (for example lesson topics, homework assignments, attendance, grades, and pupil conduct)
2. An online informal communication channel between the teaching staff, the pupils and their parents through an intra-organizational email system.

The paper will discuss the implementation process of the program and identify the factors promoting and inhibiting the system integration.

Keywords: Computerized pedagogical management system, implementation process

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1. Introduction

The postmodern society of the 21st century is required to prepare itself to contend with challenges that will most likely become more difficult in time. The basis of any society relies in its social structure whereby its success largely depends on its ability to preserve equal rights and regulated distribution of power and finance. The functional and economic success of a society lies in its capability to provide tools in order that its citizens are able to acquire an education, occupation, quality of life and sustain themselves. However, many progressive and democratic societies have inequal distribution of wealth and power and need to deal with issues such as gender, feminism, minorities, racism, cultural accessibility (Mahdi, 2018). The social structure is built on two foundations: a. interests of education and economics. b. to regulate the legitimate means of achieving these social interests. In a proper state, there is a balance between the social goals and the legitimate and normative ways to achieve these goals. Therefore, the key element in closing gaps and reaching a better quality of life for all citizens regardless of their cultural differences is through education. In order to make change it is advisable to start from an early age – education plays an integral and undeniable role in individuals' live as well as society as a whole. First of all, education in technology dates back approximately to the eighteenth century but it was only in the early nineties of the twentieth century, that technology was referred to as a field of knowledge pertaining to everyone (OECD, 2018). Moreover, numerous studies on the education system in Israel state the educational gap between the Arab and Israeli sectors (OECD, 2018). Education systems in the 90's in America as well as in Israel began new policies integrating technology, science and society in order to enhance equality in education and diminish the educational gaps. The trend of integrating technology into the curriculum opened new horizons for innovative courses in both elementary and high schools such as problem solving, creative thinking, critical thinking, team work, systems thinking, synthesis, explanation, interpersonal communication which form the basic skills needed for meeting the demands of competitive labor market (Cojocnean, 2016).

2. Literature Review

2.1. Integrating technology in education

The age of digital technology is characterized by the rapidness of communication techniques, the easy accessibility, the convenience of usage, useful utilization of time consuming in getting information and in communicating. These traits have also been transferred to the learning process. Aside from the above-mentioned qualities digital tools have additional benefits to the traditional learning techniques regarding autonomy, participation, extension of knowledge through academic resources available on the Internet, active learning and using the pupils' language communication devices such as smart phones and social media (Mahdi, 2018). For example, new and innovative techniques in order to enhance foreign language learners in Romania, revealed a low usage in digital tools for learning, and a high usage of technology for entertainment purposes and social media. Research findings proved that combining education and learning on digital platforms enhance the students' academic achievements (Cojocnean, 2016). One can learn from the below mentioned examples of technological benefits in the learning process: a. determination – finding a definition of a new word on a digital device provides the pupils with more

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practice with words as well as retention; b. learning while interacting with others on an online environment; c. meta-cognitive-cognitive – focus on learning new vocabulary using a digital device; d. memory – using digital strategies to assist in memorizing new words. The digital tools included in the research were computer-assisted vocabulary learning programs and exercises, online, lexical and electronic dictionaries, social networking, websites and apps. Usage of technology may be increased by educational supervision, teachers' guidance, a lack of awareness of the advantages in computer-aided vocabulary learning and a students' preference to using technology for entertainment, games, texting, music, videos rather than academic purposes (Cojocnean, 2016).

Mahdi's (2018) research coveys a similar approach stating the advantages of using mobile devices in teaching. The mobile technologies have created new opportunities that support learning in various fields. They are capable of performing a multitude of tasks, such as take pictures, make audio, make video recordings and movies, watch videos, send and receive audio, video and text messages, access social media and the Internet. Furthermore, the devices become more and more powerful, cheaper in price and available to the majority of pupils. In summary, efforts in design and planning of lessons in the classroom are recommended in order to enable intrinsic motivation. Learners need to be encouraged by developing feelings of success, competence and belonging in a social and educational context. Digital tools have proven to be beneficial in enhancing learning by providing new forms of expression for students such as presentations, video clips, etc. Educational awareness of the beneficial aspects of various computer and Internet programs available should be directed at both the educational staff and the students (Mahdi, 2018).

The use of mobile devices for second language learning has become widely used in American schools. The effects of using technology for teaching English to foreign students has promising effects on instruction which led to arise in the learners' motivation, self-efficacy, engagement and increased students' time with academic content. Recent research in pedagogy is bringing about new trends in teaching techniques which accentuate a pupil's strengths rather than focus on weaknesses as positive psychological feedback can enhance motivation and learning outcomes (Mahdi, 2018).

2.2. Technology in increasing intrinsic motivation

Cheaper devices and stronger technologies allow e-readers to accomplish numerous tasks such as provide a built-in dictionary, oral narration of texts. On the one hand, they provide entertainment such as music, games, videos, social media, on the other hand, they provide academic content, grammar, spelling, science content, formulas, calculations, translations – important features for enhancing learning (Mahdi, 2018). These multimodal features of mobile devices give added enjoyment, motivation, self-confidence and self-efficacy. Furthermore, generally speaking, technology offers tools for creativity; it brings teachers, parents and students together as a community in the learning process. The Internet offers massive academic information resources, written feedback opportunities, enhanced motivation, cooperative learning and more opportunities for learners' autonomy (Mahdi, 2018). Recent research on the usage of mobile devices in learning has revealed the emergence of new practices. Learning across channels both educational as well as entertainment and social interactions provide learners with the opportunity to use the target language in meaningful ways. Communication in their daily life increases the time spent on learning. Furthermore, learners have the autonomy of choosing their own learning content which makes the process more

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interesting, they may share the content with their teachers and peers, they may receive feedback instantaneously on their mobile devices, all which make the learning process more enjoyable. In addition, pupils can practice listening, reading, speaking and writing on their mobile devices.

The definition of an autonomous learner, "one who takes charge of his/her own learning" Holec (1981) and who understands the purpose of their learning, is one who takes significant responsibility, ability to organize and control, self-regulation (planning, guiding, monitoring), setting goals, identifying strategies, study plans, reflections, choosing relevant resources, assessing progress. The specific traits of an autonomous learner are: highly motivated, goal-oriented, inquisitive, hard-working, enthusiastic, curious, interested, well organized, active, initiative, flexibility, studies individually as well as in collaboration. Autonomous learners develop motivation and reflective resources and entertain positive feelings about themselves, their school work and affective benefits such as engagement, satisfaction, happiness and well-being (Shadiev et al., 2018). Factors that enhance intrinsic motivation are connected to positive feedback, feeling of satisfaction, competence, autonomy and are stressed in Self-Determination Theory and in Cognitive Evaluation Theory stressed by Ryan and Deci (2000). In order to achieve intrinsic motivation and self- determined learning classroom conditions need to adjust to three basic human needs: a feeling of belonging, a feeling of competence and receptivity in learning new ideas and skills.

2.3. Learning Management Software (Mashov)

In accordance with all the academic literature on theories, models and reforms that focus on improving students' achievement results as well as decreasing educational gaps, digitized management in education embodies a multitude of educational aims. Primarily, learning management software called in Hebrew "Mashov", provides teachers with a tool that can monitor the individual progress of each and every pupil. This teaching strategy allow for individual and differential teaching; the regular monitoring of the pupils' understanding and knowledge can be altered by the teacher immediately without having to wait for end of the year examinations. The time element has an impact on decreasing educational gaps as well as correcting pupils' errors and teachers' changing of pedagogical strategies (Luckner & Bowen, 2010). Specific attention to individual is time consuming therefore the software reduces teachers' time by supplying a quick assessment tool that identifies the students that encounter problems as well as the possibility of changing the teaching strategy rapidly (Stecker et al., 2008).

An additional facet of Mashov stems from Leithwood's transformative leadership in education which emphasizes open communication practices within the school. Interactions and communication between the principal, teachers, staff and students enhance the learning environment of the school. Blau and Hameirie's (2010) research stressed the increase of interpersonal interactions in school through using the various online channels not only on school topics but teachers' feedback, parent- teacher interaction and increased parent involvement in the child’s progress.

The exchange of knowledge is an important facet of the learning process. Mashov offers a platform for the easy exchange of knowledge and information between students and their teachers (Chen & Epperson, 2008). Roger's (2003) theories of innovation posit that new ideas take time to disseminate, however, a. creating the platform b. setting the organizational structure c. introducing these new ideas are steps to be taken. There is a distinction between Learning Management System that focuses on

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organizational aspects such as immediacy, transparency, monitoring, feedback and interaction whereas Learning Content Management or Content Management System is a separate system that focuses on learning content (Blau & Hameirie, 2010). Pedagogical management consists of monitoring, a collection of information from multiple sources such as teaching methods, student achievements, maintaining records and reporting systems so that information can be retrieved, and conclusions drawn instantly (Feldman & Blau, 2012). Analyzing the pupil's results will allow for optimal utilization of school resources, monitoring progress, flexibility in planning and teaching strategies and drawing conclusions. Feldman and Blau's (2010) research pointed out the importance of information sharing about a student between faculty, professional teachers, homeroom teachers and parents in order to get a complete understanding of the pupil. At times, weakness is due to internal factors such as family crises, illness, mental state, and so on.

Research Based on a comprehensive literature review, a discussion was held on the subject of the computerized pedagogical management system. The theoretical background was based on Blau and Hameirie 's (2020) analysis for these systems as well as other state-of-the-art on this subject.

3. Analyses and Findings

Research findings proved that updated information flow, data-based decision making, setting of pedagogical goals and enhancing communication between all the relevant parties enhances both teaching and learning processes in schools (Feldman & Blau, 2012). Similarly, additional research also pointed out the effectiveness of online systems in pedagogical management. The decision-making process, information flow and increase of communication and feedback between teachers, students and parents as well as the progress tracking facet promoted school's pedagogical efficiency (Blau & Presser, 2013).

As mentioned in the first section of this paper, reforms and change take time to implement especially in traditional oriented schooling systems.

The integration of management technology software may increase productivity by using comparative information – such as comparing raw data between students, between classes, between layers and even between other countries. In order to draw accurate conclusions, it is necessary to obtain additional statistics, demographics, teaching methods and student abilities (Stecker et al., 2008).

In summary, schools that have implemented LMS in their educational system reported an increase in students' level of motivation, parent involvement in child's progress, increase in interpersonal interactions, learning and information exchange (Blau & Hameirie, 2010). Apart from increased management efficiency, interactivity and communication, support system for principals and teachers, its major success is management's decision on including students and parents as an integral part of the LMS process (Blau & Hameirie, 2010).

4. Conclusion

The Computerized Pedagogical Management System is designed to apply the computer and internet infrastructure for processing, reporting and using real time relevant data in order to perform management tasks and present information by principals and school staff. The system is designed to improve school

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effectiveness and contribute to change and efficiency among all position holders in the school – school management as well as educational and administrative staff.

The implementation of this system by teachers and principals is in order to enhance learning and pedagogical processes. Specifically, this concerns teachers' feedback function, i.e., all interactions regarding pupils are conducted in the system as well as a function that provides parents and pupils access to pupils' data, enabling them to communicate with the teaching staff (Stecker et al., 2008).

and their parents can log into the system in order to receive updates related to topics learned in class, homework assignments and scores, providing a picture and a record of the pupils in the school framework. The more effective this system database is, the more frequent and immediate data entry by the school staff is.

Consistent interaction among all participants is vital for the success of the system, and teachers play a crucial role in this process. Blau and Hameiri (2010) emphasized that the effectiveness of the computerized pedagogical management system depends on updated data being entered into the system, on data-based decisions and on setting pedagogical goals and increasing communication with pupils and subject teachers without time and place limitations.

In summary, in review of the academic literature on the subject of a Computerized Pedagogical Management System one can conclude that the digital feedback system contributes to all role players in the schooling system. It enables a continuous interactive communication between teachers, parents and pupils allowing for significant follow-up procedures. These digital monitoring strategies may contribute to the academic success of pupils in both Arab and Jewish schools as well as increase students' motivation to learn. A doctoral research on the subject of Computerized Pedagogical Management Systems has recently been done by the author, with the aim of examining the benefits of a digital monitoring and feedback system in enhancing learning in Arab and Jewish schools.

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