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Educational Portal in Oman: Toward a connected community

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ABSTRACT: *There are currently more powerful ways and tools to connect people in schools and local communities to each other, and to the outside world than ever before. Educational portals, for example, are emerging as a viable option of learning and communication technology that takes advantage of connectivity and information delivered or received primarily through wired or wireless networks capable of dynamic updating, storage, and sharing of knowledge and information. The main purpose of educational portals is to create connectivity between people and information, and provides opportunities for shared cognition and social learning approaches. The educational portal provides dynamic education opportunities where the community of students, teachers, administrators, policy makers and parents become a connected set of valuable resources. These connected communities can perhaps accomplish goals that would be impossible through individual efforts. The Educational Portal in Oman is designated to be the main gateway to electronic services offered by the Ministry of Education in Oman to provide a rich, personalized, and highly customizable experience to its users. The main objectives of the e- portal include, but not limited to fostering effective and efficient communication and data-driven decision-making across diverse and geographically distant communities, and expanding learning opportunities for the students at all levels. The general aim of this study is to examine the information exchange mechanisms between the connected community members (students, teachers, administrators, policy makers, and parents), and the level of utilization, accessibility, and complexity as related to the demographics of the community members. This study is based on a descriptive analytic research methodology, using a service-utilization questionnaire. A stratified random sample of four hundred subjects participated in the study. The results are presented in reference to the demographic variables of the subjects, and the conclusions and implications were drawn from these results accordingly.*

Keywords: *Educational portal, Oman, learning communities, communication tools, educational innovation.*

البوابة التعليمية في سلطنة عمان: نحو مجتمع متصل

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الملخص: بدأت االبوابات التربوية في الظهور حديثا كتقنية ناجعة لتفعيل دور المؤسسات التربوية، وربطها مع بعضها البعض، وبالمجتمعات المحلية ذات العلاقة. وتعتمد هذه التقنية أساسا على تكنولوجيا المعلومات والاتصالات الشبكية القادرة على تخزين، وتحديث، وتبادل المعارف والمعلومات بصورة ديناميكية. فالهدف الرئيسي من البوابات التعليمية هو خلق بيئة تعلمية ترسخ التعلم كمفهوم اجتماعي، وتوفر فرص التواصل والتفاعل بين المجتمعات التعليمة المختلفة. وقد أنشأت بوابة التربية في سلطنة عمان لتكون البوابة الرئيسية للخدمات الإلكترونية التي تقدمها وزارة التربية والتعليم في عمان من أجل تعزيز التواصل بين المجتمعات التعلمية، وتوسيع نطاق فرص التعلم للطلاب على جميع المستويات. وتهدف هذه الدراسة بصورة عامة إلى تحديد آليات تبادل المعلومات بين أفراد المجتمعات التعلمية المختلفة (الطلاب والمعلمين، والمسئولين، والآباء)، بالإضافة إلى تقويم مستوى الاستخدام والصعوبات التقنية من وجهة نظر مستخدمي البوابة التربوية. واعتمدت الدراسة في منهجيتها على المنهج التحليلي الوصفي . وتكونت عينتها من عينة طبقية عشوائية ضمت أربعمائة مشارك من المعلمين والطلاب و الإداريين في المرحلة الثانوية، وأولياء أمور الطلاب. كما تم استخدام استبيان يحتوي على ٣١ فقرة تغطي الخدمات الأساسية التي تقدمها البوابة للفئات المختلفة من المستخدمين. وقد أظهرت النتائج وجود تباين كبير في نوع الخدمات المستخدمة، ودرجة استخدامها من قبل الفئات المختلفة في عينة الدراسة. وفي ضوء ذلك تم تقديم بعض المقترحات والتوصيات.

الكلمات الرئيسية: بوابة التربية، سلطنة عمان، المجتمعات التعلمية، أدوات الاتصال، المبتكرات التربوية.

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Introduction

The advent of information and communication technologies has inevitably redefined the education model for all learners, teachers, parents, and policy makers alike. There are currently more powerful ways and tools to connect people in schools and local communities to each other, and to the outside world (Nelson and Kellogg, 200). Obviously, schools are becoming learning harbors for teachers, students, and other concerned stakeholders in the local communities. YuUvarov (2004) argues that in any developing information society, free access to the entire wealth of information accumulated by mankind should be everyone undeniable right, and should not be restricted. However, applying the information-based approach to education involves more than just installing internet –connected computers into schools. It involves modifying the content, methods, and organizational forms of education. The emerging technologies in networked communities, networked tools, and learning management systems converge to transform the ways all students learn and teachers teach. Teachers, administrators and policy makers, for example, currently depend on these networked tools to improve their abilities to communicate, and create interactive, relevant learning experiences for students. Research has shown that when technology is integrated and utilized effectively and equitably into instruction, student performance improves (Wideman and Owston, 2003). These technologies not only help students to participate in a more personalized and equitable opportunities, but also allow teachers to make instruction and learning more relevant to their students, and parents more connected to their children's education.

The wireless networking, for example, provides learners with the opportunity to connect with colleagues and instructors via online resources from a much broader variety of places than what is accessible via traditional wired connections. This shift in learning locations and learner access to information has been driven both by learners' demand and by advances in technology that make mobile technology access a practical option for the average person (Frohberg, 200). Gates (1999) argues that learning will be in an international environment characterized by collaborative work, and effectively communicating ideas, taking greater responsibility for their own learning, and assuming new roles in supporting and mentoring peers. Teachers, as knowledge managers, on the other hand must have the abilities to use innovative practices and seek to work with colleagues in other locations sharing their information, and reflecting on their best practices. It is important, therefore, that teachers become successful knowledge managers who can monitor and plan the learning processes and programs for individual students with access to a wide network of professional colleagues, and an extensive collection of learning recourses (Triggs 2004).

Current available technologies allow teachers to work with colleagues in other locations nationwide, sharing their professional knowledge and expertise, and assuming a new role as mentors, facilitators, and knowledge managers. New methodical and innovative practices, for example, can quickly be reviewed and tried by colleagues and be made available to all. However, according to Lundin (2004), most educational systems have not been building on the true capacity of the technology and its capability. This means that for each learning and teaching task,

where it is beneficial to do so, all concerned stake holders are efficiently networked to the appropriate place where the information and ideas are located. It is important, therefore, to create a more flexible and technologically sound infrastructure that ensures an institutional curricula and an evaluation framework, and at the same time take into consideration learning and training that take place in different environments. Guzhelya (2004) points out that to build an up-to-date high-tech society it is extremely important to start instilling an information culture in its new generation of citizens immediately so that they become used to searching for, analyzing, using and constructing knowledge and information.

Educational portals, in general, are emerging as a viable option of learning and communication technology that takes advantage of connectivity and information delivered or received primarily through wired or wireless networks. These portals are capable of dynamic updating, storage, and sharing of knowledge and information. This produces a functional framework definition for educational portals in terms of connected users, location, time, learning and training approaches and delivery logistics. Thus, such portals consist of three main components: a community of practice, a body of knowledge, and services to maintain the body of knowledge. According to Hawryszkiewycz (2002), educational portals can be considered as gateways to educational information and services specifically targeted at a certain community, providing them with a virtual meeting place to interact, communicate and learn from each other. Therefore, the main purpose of educational portals is to create connectivity between people and information, and provides opportunities for shared cognition and social learning approaches. It is anticipated that the introduction of the e-portal in educational systems will give a strong impulse to the integration of information technology into education. Research shows that when teachers participate in online communities of learners and professionals they are more likely to integrate Information and Communications Technology literacy into classroom instruction (Wenger, 199). The educational portal provides dynamic education opportunities where the community of students, teachers, administrators, policy makers and parents become a connected set of valuable resources. In addition, these portals can possibly foster an efficient communication, and data driven decision-making across all concerned groups in the community. The connected communities, in turn, can perhaps accomplish goals that would be impossible through individual efforts. However, all involved stakeholders need to be clear of the goals, objectives, and expected impact of the e-portal.

The Educational Portal in Oman is designated to be the main gateway to electronic services offered by the Ministry of Education in Oman to provide a rich, personalized, unified, and highly customizable experience to its users. The main objectives of the e- portal include, but not limited to fostering effective and efficient communication and data-driven decision-making across diverse and geographically distant communities, and expanding learning opportunities for the students at all levels. Anytime, anywhere access to the portal can occur through multiple channels such as the web and mobile devices. It is assumed that all involved community members need to know about information technology, and be able to use and share the available information and knowledge resources. However, this assumption may not always be true. Bringing different learning communities together to study and

share information in an e-portal is not a simple matter. Its success depends on a number of factors such as instructor characteristics, student characteristics, technology infrastructure and technical support (Salim 2007). Therefore, it requires careful design and a more robust and scalable approach to technology infrastructure and services, and necessary expertise to manage the interrelated elements of networked education.

Recent strategic decisions in the Ministry of Education have lead to plans for developing some online content for every subject and every age group in both Basic and Secondary education sectors (Hall 2005). However, designing flexible learning resources for the e-portal can be very challenging, because of the multiple technologies involved in this medium (e.g., hardware, software, networks, e-content, etc.). The issue of scale, for example, is one of the main demands for a successful application of the e- portal. Viteli, (2000) argues that without a saturation of the technology in the target audience the system will fail. In addition, there is also a reasonable concern about the issue of capability. For example, while all users may possess a certain type of hardware, different models may have different capacities in terms of processing power, network access, or other relevant features. Thus, it is necessary to consider the content and format of the information being delivered, taking into account the users' locations and the limitations of their available technologies (Caudill, 2007). Moreover, most learners and teachers are connected to digital media devices at all times of their day, and are comfortable accessing information through these devices. Obviously learning communities no longer require a particular location or environment to review and share learning resources and information repositories. Therefore, the technical acumen of the intended community members must be considered along with the technology access of the whole group (Cobcroft, Towers, Smith, & Axel, 200). Furthermore, the initial motivation for constructing knowledge or utilizing information repositories in the community database can also be viewed from a sustainability perspective. The development of social relations, for example, might gain a dynamics of its own beyond the sharing of resources and information. However, any investment in designing educational portals should depend largely on its purpose, and information exchange mechanisms among the target communities. It is, thus, worth investigating the aspects of the enabling mechanism and the sustainability effects on the stimulation of social relations among the connected community members.

Purpose of the study

The general aim of the study is to explore and identify the impact of the educational portal on the promotion and development of a connected community. More specifically, the study intended to answer the following research questions from the perspectives of the connected community members (students, teachers, administrators, and parents):

- What are the commonly used information exchange mechanisms among the connected community members?
- What are the levels of utilization, accessibility, and complexity of the e-portal services, as related to the demographics of the community members?

- What are common obstacles for utilizing the e-portal services?

Description of the e-portal

The educational portal in Oman can be considered an innovative educational initiative. It was launched in September 2007 by the Ministry of Education. The portal serves as a link between all related elements in the educational system, using a group of programs and several web-based services which aim at facilitating the educational process and present it in an affective and attractive shape for all community members. In addition, it helps in organizing and monitoring the administrative work through a number of systems such as electronic requests and document archives.

The e- portal offers two types of services: free access services available for any visitor. Examples of these services include: threads follow up, newsletter, general information, search services, voting, advertising, guide, articles and news. The other type of service is limited only to users with account numbers and passwords (see figures 1& 2). These include: cha ˙ng services, short messages, interactive voice response, sending fax electronically, and mobile services. In addition, the e-portal offers specialized electronic services such as the school administrative system, learning management systems, and document archives and messages. These systems provide the portal users (administrators, teachers, students, and parents, etc.) with a variety of services such as school timetable, exam timetable, seat numbers, exam halls ,behavior certificate, citizenship certificate, students reports of latency and absence, evaluation reports, forums and chatting, digital text and e-books, e-learning resources and statistics, student performance reports, fax services ,and mobile services, etc.

Figure 1: general home page of the e-portal

Figure 2: A user page of the e-portal

Methodology

This study is based on a descriptive analytic research methodology. The current status of the e-portal and the relevant issues addressed in the research questions are investigated from the perspectives of all concerned community members.

Research Instruments

The researcher used a questionnaire to investigate the issues of accessibility, the frequency of features utilized, and the challenges facing the community members. The questionnaire consisted of 31 items covering the features, and services provided by the E-Portal. The purpose of these items was to measure the level of accessibility and frequency of utilization of the available services using a 5-point scale, and one open-ended question for the difficulties and challenges facing the community members. The questionnaire was validated by a number of experts in the field based on the content of the portal, and revised accordingly.

Population and Sample

The population of the study included all connected community members who were given accounts and have free access to the educational portal in Oman at the High School level. A stratified random sample of four hundred subjects from the students, teachers, administrators, and parents were randomly selected to participate in the study.

Results and discussion

Obviously, the e-portal was designed to deliver various services to the intended communities through its integrated subsystems: the Internal Portal System (IPS), the School Management System (SMS) and the Learning Management System (LMS). These subsystems offers a wide range of services covering a learner oriented administration activities, professional development, as well as open sources and tools to support the learning process within the entire community. However, the results revealed that the level of portal utilization and the commonly used features vary according to the type of connected communities. Figure 3 below, for example, illustrates that both students and teachers utilize the portal more frequently than administrators and parents, respectively. With regard to the information exchange mechanisms between the connected community members, the results revealed that the most frequently used features for information exchange are forums and emails and announcements board with an overall percentages of 53.3 , 4 , respectively. Figure 4 shows that both students and teachers, as communities of learners, use forums more than all other connected communities, with an overall percentage of 93 , and 5 , respectively. On the other hand, administrators use emails and announcements board to access or disseminate administrative news and educational policies, while parents access only the information related to educational activities, school contact information, and application forms. However, it appears that forums are used only within communities as a means for information exchange. Both students and teachers indicated that they use their own special interest forums to participate in private exchange of ideas, opinions, and experiences. Unexpectedly ، although learning and teaching can be highly assisted through the available educational content, only about 30 of the teachers used the digital library resources for instructional purposes compared to 5 of the students who used the search facilities to retrieve available e-content and archived posted messages related to their learning needs.

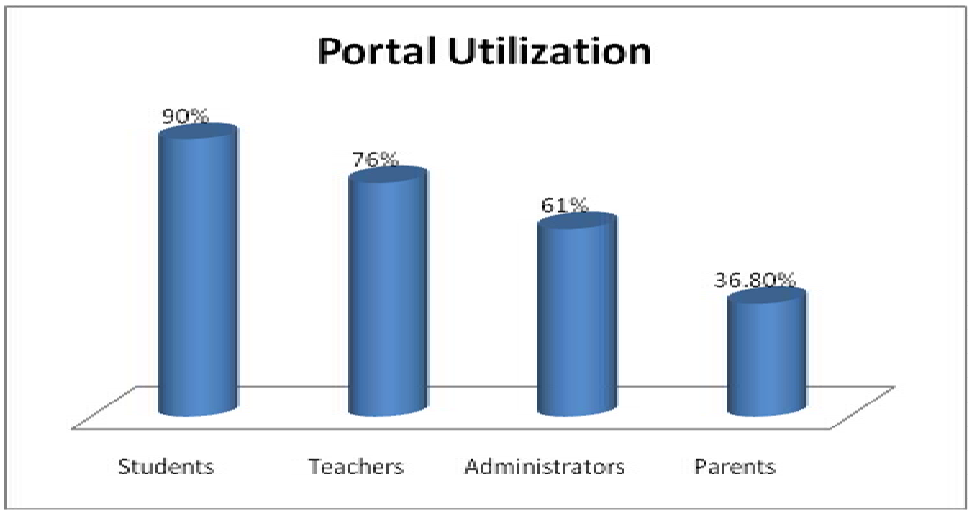

Figure 3: Level of portal utilization

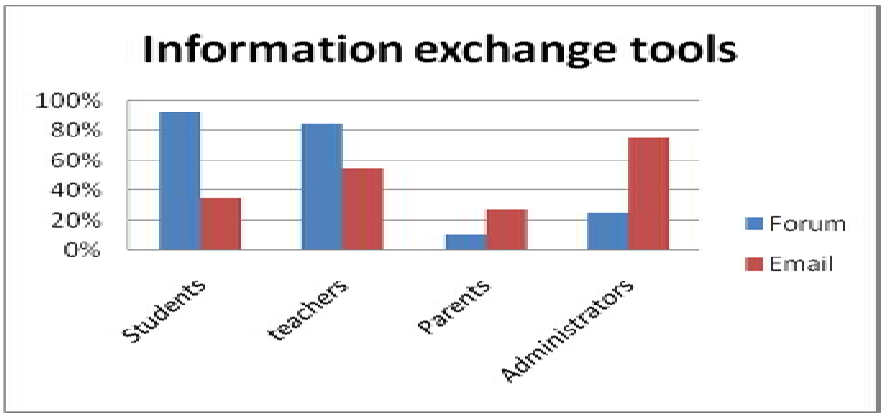

Figure 4: Information exchange mechanisms

Evidently, the e-portal communication tools created a number of communities of learners and various discussion forums (e.g., teachers, students, and supervisors) at different levels and from different disciplines. However, there appears to be a lack of guidance for the purpose and roles of these communities that can be linked to students learning. In addition, these communication networks require an effective infrastructure that can harness information and communication technologies in order to provide and improve the educational services. The participants indicated that the current network infrastructure does not provide a nation-wide support for utilizing the services provided by the e-portal. In addition, they also indicated that a significant portion of the resources was allocated to the technical infrastructure (i.e., hardware and software), and less on training and professional development, and the learning resources that may promote students learning. Most of the teachers and students (5 , and 0 , respectively) indicated that the portal doesn't offer an interactive learning resources in varied formats. In addition, both communities complained about the loading time of important content pages. These findings are consistent with Sales, Al Barwani, and Miske's (200) study. They noted that all teachers interviewed reported regular and ongoing problems with trying to access the website from the school computer lab. According to Abanumy, Al-Badi and Mayhew (2005), the success of all e-Government endeavors are critically dependent on the accessibility of its integral websites. Nonetheless, the innovation of the e-portal seems to be gaining momentum and increasingly becoming mainstream practice. Perhaps the main driving force for its relative sustainability is its alignment with the government vision to transform the Omani society to a digital society.

The Sultanate of Oman has embarked upon an ambitious plan of transforming Oman by empowering its people, through the E-Oman initiative. The vision of the Information Technology Authority (ITA), for example, states that "ITA works with a vision to transform the Sultanate of Oman into a sustainable Knowledge Society by leveraging Information and Communication Technologies to enhance government services, enrich businesses and empower individuals" (http://www.ita.gov.om/ITAPortal). It is possible to assume that the ITA initiatives and investment in e-technology have played a pivotal role in sustaining the momentum of the Educational Portal. In addition, the Ministry of Education (MOE)

undertook several projects to improve the communication networks and empower its employees with required digital literacy and higher levels of competence through training programs and workshops. As one of its strategic goals for institutionalizing the e-portal, the MOE established a directorate with specialized and devoted units within the Ministry and different regions to maintain and provide the required technical support for all users. In addition, these units are currently providing the professional leadership to various e-system initiatives. However, its current existence appears to be at the higher technical level that provides only administrative and maintenance support. This can be directly linked to the ownership and accountability factors, where small number of individuals who have the technical knowledge bear the responsibility for sustaining the innovation, while the role of the primary users is limited to the utilization of the communication services.

Conclusion

The Educational portal in Oman appears to have the features of both a Networking and an Education Portal. It provides users with points of access to various educational tools and facilities. It also functions as a center of communication that forms special networks for the different types of users. In addition, the portal provides access to various online educational resources, adequate search facilities, and links to other relevant organizations. However, the components of the portal that require a high level of sophistication and continuous technical support are less frequently used by the target communities. Also, the important features that can have direct impact on student learning appear to be underutilized. It is important, therefore, to associate the technical investment, and the level of sophistication and support with the needs of the learning communities, and the commonly used information exchange mechanisms among them.

This study also showed that the “immigrants” (students) appeared to be adopting and utilizing this emerging technology more than the “natives” (teachers). In order for teachers to represent the information culture and instill it in this new generation, they need to acquire not only the new knowledge and skills, but also need to learn how to use and integrate IT in education. However, it will be futile to assume that teachers will develop the skills required to effectively use the e-portal, if they are not provided with the appropriate tools, training, and resources that allow them to take responsibility for their own learning and professional development. Thus, it is important to pay a special attention to the training and professional development of the target communities, particularly, the teachers, administrators, and parents. Furthermore, for a system-wide adoption of this innovation, it is important that all connected communities (i.e, policy makers, administrators, teachers, and parents) be able to assess the value of their contributions through this innovation on students learning. Perhaps the main missing link in the e-portal as an educational innovation is the lack of research-based evidence for its impact on improving the efficiency of educational services, and empowering teachers and students with the skills and knowledge that can enhance student learning and, consequently, lead Oman to achieve its long term goal of becoming a sustainable Knowledge-based Economy.

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