The effect of Web 2.0 applications on the development of educational communication activities in teaching

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Abstract. Communication is an essential task for the educational process, and it is a vital process for all consensus and understanding processes that educators must undertake. The conversation aims are to reach the desired goals of the educational institution. Communication is an interactive social process-based and highly dependent on the sharing of meanings between the sender and the receiver. There is excellent effectiveness of educational technology because of its success in dealing with many instructional problems. This effectiveness is due to its characteristics and advantages, and web 2.0, if properly employed, can solve some - or all - of the issues related to scholarly communication. This study aimed to propose a model in order to activate educational communication activities and teaching in primary schools. The results have shown a remarkable improvement in all aspects of communication activities after employing Web 2.0 applications in these aspects to develop and increase their effectiveness. We hope that this study will contribute to opening a new direction of research concerned with employing new generations of the Web, such as Web 3.0, to create an educational connection that contributes to improving educational outcomes in schools.

Keywords: Educational communication; Web 2.0; Primary schools; Educational media; Instructional communication technology.

1. Introduction

Educational communication represents the process of transferring knowledge and concepts from the teacher who represents the sender to the learner who represents the future. This knowledge and information are like a message passed to the other party, which is the learner (Natale & Lubniewski, 2018). Numerous studies confirm that scholarly communication is one of the main pillars of active learning. Hence, communication is a purposeful process and not random in its educational state, and the primary goal is often adjacent to the achievement of educational goals. Ferraro (2018) confirmed That the teacher is the vital element on which the most significant depends on achieving effective scholarly communication inside the classroom and participates in many communication activities outside the classroom. Accordingly, informative conversation inside the school represents the basis for real success in reaching that school to achieve its desired educational, learning, and educational goals. The various communication activities within the school represent the vital interaction of the components of the educational communication process (Blau, Hameiri, & Technologies, 2017). Whenever these activities are characterized by high quality and based on scientific foundations, that result from this effective scholarly communication contributes significantly to the development of operations. It contributes to improving educational outcomes in the school. Communication is an essential task for workers in the academic field. Communication is a necessary and vital process for all the means of consensus and understanding that educators must undertake to reach the desired goals of the educational institution (Little & Kirwan, 2019). Communication is an interactive, social process that relies heavily on sharing meanings between the sender and the receiver. Communication is the process of transferring educational ideas and information from the school principal to the teachers, or from the school to the educational

administration, utilizing a written or oral method, which leads to unity of efforts to achieve the school's goals to fulfill its mission (Natale & Lubniewski, 2018).

Technological applications can support the development of communication activities, especially Web 2.0 applications. Web 2.0 represents a modern concept for a variety of second-generation Internet services that increase user participation in building and enriching web content and improving sharing and cooperation between users to create electronic communities. Ere the appearance of the Web 2.0 concept, static pages belonged to the Web 1.0 generation. The so-called Web 1.5 appeared, which is the beginning of dynamic pages, with confusion between the concept of the Internet and the Web, where the Web is one of the Internet services. Web 2.0 Various applications are entirely dependent on the World Wide Web. These applications included new features with added value that changed the nature of the content and how users interact with this content (Caliskan, Guney, Sakhieva, Vasbieva, & Zaitseva, 2019).

When we think about the educational issue within many primary schools in developing countries, we will notice that the communication process is still traditionally occurring. Where authoritarianism is present, which reflects negatively on educational performance, and contributes to the failure of development plans and programs, given that the individual who will contribute to development does not possess the qualifications and competencies necessary for his involvement in the development process (Garrote, Dessemontet, & Opitz, 2017). We also find a set of problems and obstacles that may stop the educational communication process in the teaching and learning process adequately conducted. This fact leads to the failure to achieve the expected communication goals (Karahan& Roehrig, 2016).

Moreover, the lack of clarity of the communication objectives and the blurring of the perception of the effects intended to messages' receiver all of them make the communication very poor. Also, it reduced pedagogical transmission and the sender's failure to specify which windows to open in the message channels; To reach through it the vital goals of communication (Ohei & Brink, 2019; Alajmi, Al-Sharafi, & Abuali, 2020). Based on the above issues, the problem of the study is the weakness of the communication activities monitored in primary schools, represented in the communication activities in education, educational media activities, instructional documentation, educational communication technology, administrative communication, and public relations.

The current study mainly aims to build a model that employs some Web 2.0 applications in primary schools to study their impact on the development of communication activities in primary schools. Based on this general objective, the study endeavored to achieve the following goals: 1. To investigate the effect of Web 2.0 applications on communicative activities in education. 2. To examine the effect of Web 2.0 applications on media and educational documentation activities. 3. To investigate the effect of Web 2.0 applications on scholarly communication technology.4. To examine the effect of Web 2.0 applications on administrative communication and the public relations body. The body of the study contains multiple sections describing the main content of the paper (for example, method, results, analysis, and discussion). You may use up to three levels of headings to categorize content as deemed necessary.

2. Conceptual Model

Education experts in various countries seek to discover the best ways and means to develop education and improve its outputs. There are several methods, including integrating technology into the educational process and, on the other hand, keeping with the rapid technological development (Faizi, 2018). This rapid development in such a way that the one who is late in synchronizing this development cannot adapt to this new style, and his manner becomes obsolete, and his method dissipates. Plus, since education was the basis for solving social and economic problems, it had to be synchronized with this tremendous information development (Sharma & Unger, 2016). Based on technological tools and applications that serve educational needs, the Internet appeared as one of the means of technology because its channels and apps made linking the world in terms of information and sources faster. According to this fact, the current study focused on some main educational concepts. These concepts will be explained in the following sections (Alkhataba, Abdul-Hamid, & Ibrahim, 2018).

2.1 Communication Activities in Education

Instruction is an organized communication process that aims to bring education and learning. The teacher always seeks to increase the interaction between himself and the learner through communicative situations for which he draws procedural goals, designs, implements, and evaluates them. On the other hand, many different means of communication led to a massive boom in handling information, increasing human knowledge (Abebe, Bergen, & Shifera, 2018). The ease of transferring it from one place to another in the least possible time, so the era in which we live in the age of the communications revolution, the

period of computers and the Internet, the era of satellites, and the whole world has become a small village.

Furthermore, the relationship between students is visible through social and human contacts, which are evident in the educational and social interactions and activities that they carry out inside or outside the classroom or in the schoolyard. Such interaction and communication can be positive and manifest in love, cooperation, participation, and competition based on honest work and production. Such interaction can be harmful and dominated by hatred, alienation, quarrels, and destructive rivalries (Yuen & Hew, 2018).

2.2 Educational Media and Documentation Activities

The educational media is interested in spreading the activities, programs, and activities carried out by a specific educational institution. Bayram (2017) confirms a close link between the school's success and the effectiveness of educational media in it, concerned with the quality, formulation, and communication of media messages to the target audience through various fast and accurate channels. De Rossi & Zorzi (2019) confirm that pedagogical documentation is the set of techniques used in storing and processing information to making it available to everyone who needs it, from managers or teachers in the school. Whether at present or knowledge about old activities carried out by the school in the past years, so when measuring communication within any institution Educational it is necessary to monitor the availability of documentation of these activities within the school (Mbunde, 2017).

2.3 Educational Communication Technology

There is a close relationship between educational technology, communication technology, and the educational learning process. The availability of technological applications complements informative communication elements. The availability in the learning environment makes it easy for both teachers and learners to employ them with high quality; also, technology can work on updating the communication activities for all other aspects (Akarowhe, 2017).

2.4 Administrative Communication and Public Relations

Communication in the concept of relationships and administration goes to the stage of transmitting effective communication (Abu Sultan, Al Shobaki, Abu-Naser, & El Talla, 2018). That leaves an excellent effect Communication on the hearts of the recipients and viewers of it, it aims to improve public opinion towards the institution, and this will only if what transmitted out of contact is something useful, practical, and influential (Husam, Naser, El Talla, & Al Shobaki, 2018). Successful communication requires the availability of three elements: the sender of the message, the message, and the receiver of the word, and these should be active elements for public relations to communicate the influencing idea (Hohmann, 2019).

2.5 Web 2.0 Applications in Education

The importance of Web 2.0 is growing very widely in the educational process, as we can employ its applications at all levels of education and use it in the processes of learning and teaching and as the main focus in school administration (Bogdan, Pop, & Holotescu, 2019). Web 2.0 is one of the most attractive methods for learners to provide fascinating technologies for the learners' senses. Web 2.0 promotes learner engagement and the importance of learner engagement. Create an environment for cooperative learning by making all students actively participating in groups. Raising students' ambition to reach them to design techniques similar to the ones they study through. Increase social interaction and open space for self-talk among students to increase their involvement in educational practices (Sharma & Unger, 2016). Web 2.0 helps individuals a continuous learning process as they can continue lifelong learning through endless Web 2.0 applications. It is facilitating the exchange of knowledge and skills between learners and the teacher. It helps in a broader understanding of abstract concepts and learning through experiences and Web 2.0 applications such as augmented reality and virtual reality (Gençtürk & Korucu, 2017). They are bringing the distant environment that is difficult to reach from the learner through different applications where the distance from Dangers and experimentation may affect the safety of learners. Web 2.0 applications, changing the role of the teacher from a traditional instructor to a mentor to learners as a leader and supporter of the educational position as he employs applications in the presentation of informative content and activities (Alkhataba, Abdul-Hamid, & Ibrahim, 2018).
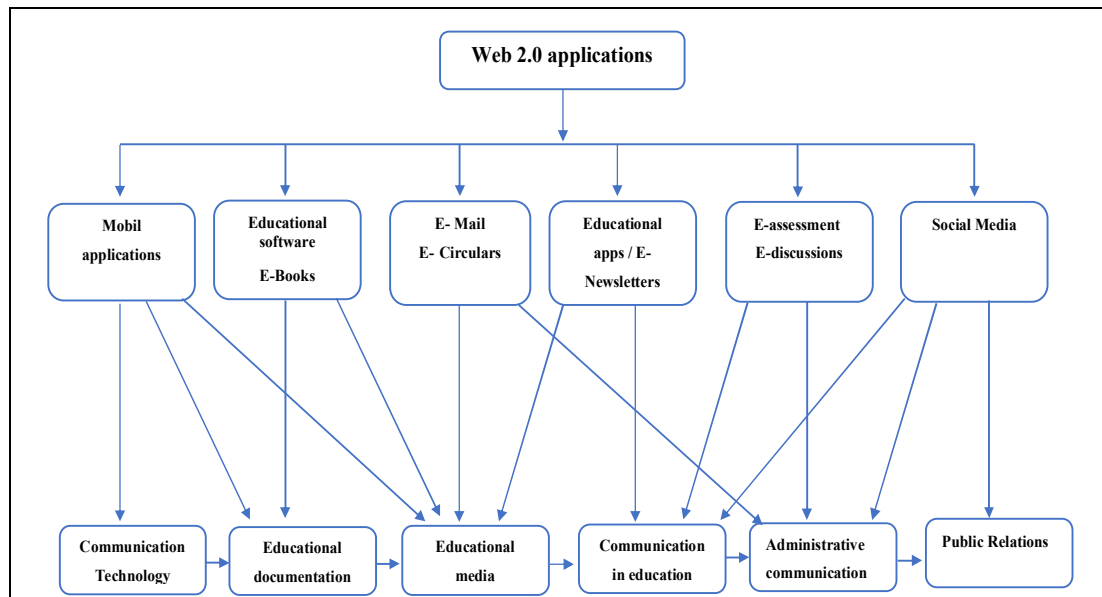
Figure 1. Conceptual Model.

3   Methodology

The present study adopted the case study method through pre-and post-measurement through a questionnaire to monitor the school's communicative activities and a notecard in one school in Oman (Al-Manara Private School) (Lowe, Chiu, & Oreszczyn, 2018). The first researcher is a principal of this school, so it was easy to conduct this study. The pre-measurement and level of the school's communication activities were done through the two study tools (the questionnaire and the notecard). Consequently, a model employing Web 2.0 applications was proposed to develop and improve the school's communicative activities (Sharma & Unger, 2016).

A measure of communication activities to control these aspects and based on previous studies that dealt with the educational communication process and included several measures for monitoring communication activities in educational institutions, the researcher made a measurement scale consisting of two main tools: the observation card and the questionnaire and based on what has observed from the communication processes within the school. The observation card was filled out, and concerning the survey, it was circulated to the school teachers to answer it. This measurement was not limited to the personal opinion of the researchers. Still, it included all teachers and administrators working in the school to raise the level of credibility and ensure accurate monitoring activities (Krosnick, 2018).

3.1 Questionnaire

To ensure the quality of monitoring and not rely on one source or one tool. Based on the previous observation, an electronic questionnaire was built (as attached in Appendix1) that included six axes (communication activities in education, educational media activities, instructional documentation, scholarly communication technology, administrative communication, and public relations) related to the communication activities required to be observed within the school and consisted of 50 phrases. The questionnaire was assessed by experts in educational technology, verifying its validity and reliability (Lowe, Chiu, & Oreszczyn, 2018).

3.2 Application (Notecard)

Notecard was used to monitor the effectiveness of communication activities at Al-Manara School in all targeted aspects. It is possible to access all scholarly communication required to be supervised to ensure the extent of their activation or not and the actual percentage of that. In building the observation card, the two researchers relied on the goal to be measured, which is the school's communication activities, and based on previous studies (Conderman, 2019).

3.3   Data collection

One of the most critical steps used in scientific research is data collection. It contributes to the analysis and classification of the data collected according to the method used. To present them at the end of results that can be used and applied to other similar phenomena (Paradis, O'Brien, Nimmon, Bandiera, & Martimianakis, 2016). The questionnaire is considered one of the most important and most popular data collection tools. It is a tool to be relied upon to obtain information and facts and measure past experiences, trends, and opinions to link them with current behaviors. Then it is presented in the form of a previously prepared way containing several questions to analyze their results. In the data collection stage, the data were collected during the cardiac and dimensional measurement of the questionnaire via Google Form and analyzed in the analysis stage (Mkandawire, 2019). Observation is considered an important method and is used to accurately observe phenomena to interpret them, find the underlying relationships, and collect data related to the behavior of individuals. It is also used to study and examine personality in life situations to monitor interactions. The observation varies between direct, external, subjective, and restricted observation, concerning the observation card, data collected in the pre- post-measurement phases through data collection and analysis (Niegowski & Lafortune, 2017).

3.4   Data analysis

The analysis process is processing data and organizing it to obtain valuable information. The analysis process helps to reach the knowledge in its raw form and know its primary resources. Statistical analysis is the method used by researchers in this study to form valuable information from worthless information if found individually (Schabenberger & Gotway, 2017). Then we measured the validity and reliability of these results to generalize them to all members of society. SPSS was used for statistical analysis and the essential analysis software ever, and it is the most popular, used, and widespread program. Its four letters stand for the Statistical Package for Social Sciences. Data collected from the questionnaire and observation card entered, averages calculated for each of six axes to be measured before and after applying the proposed model. Table 1 illustrate the pre-measurement analysis (Sivam, Karuppaiah, Yedida, Atluri, & Mathur, 2018).

NO	Communication area	Part (1) percentage	Part (2) percentage	Part (3) percentage	Average area percentage
1	Communication activities in education	66%	64%	63%	64%
2	Educational media activities	52%	56%	57%	55%
3	Educational documentation	50%	49%	53%	52%
4	Educational Communication Technology	36%	41%	43%	40%
5	Administrative contact	60%	58%	62%	60%
6	Public relations	41%	45%	42%	48%

Table 1. Pre-measurement analysis.

4   Proposed Model

The following are the steps for analyzing, designing, implementing, and evaluating a model based on Web 2.0 applications to activate and update communication activities in primary schools.

4.1 Analysis

After the pre-measurement process for the six fields of communication activity at Al Manara Private School, the results of the questionnaire analysis and the observation card in each area are as follows:

A. Public Relations: Public Relations is a critical element in improving school communication activities (Abebe, Bergen, & Shifera, 2018). Institutions aim from public relations to ensure the understanding, communication, and support of the target community of the educational institution. After analyzing the pre-measurement of this field, the researchers found a marked weakness in public relations activities between the school and the local community. The researchers included in this axis several items, as it contained four elements in the notecard and seven items in the questionnaire. The questions varied about the extent of activating educational communication activities related to public relations affairs, including planning, means of communication, and its coverage of the school's local community; the average rate of activation of this axis was 48%.

B. Administrative communication: The researchers believe that the school administration is the most critical element in activating the communicative activities in the school (Akarowhe, 2017). For the importance of this axis in monitoring the educational communication activities, the researchers included four items in the notecard and ten items in the questionnaire. This axis had the procedures practiced by the school administration. Correct administrative communication enhances communication channels, the existence of a democratic atmosphere between management and workers, and reinforces feedback about the performance of employees and justice among all school employees. The result of this axis represents 60%.

C. Educational media: Researchers agree that educational media is concerned with disseminating the activities, programs, and events carried out by a specific educational institution and confirm a close connection between the school's success and the effectiveness of educational media. Points showed the availability of educational media as a means of communication inside the school and transferring media activities outside the school. The results of monitoring resulted in the arrival of educational media in the school to 55%.

D. Educational documentation: It is the set of techniques used in storing and processing information. It is made available to everyone who needs it from managers and workers in the school, whether at present, or information about old activities carried out by the school in the past years, so when measuring communication within any educational institution, it is necessary to monitor the availability of documentation of these activities within the school (Mbunde, 2017). Therefore, one of the elements of the prepared questionnaire and the observation card was educational documentation. The survey included 6 points and the observation card 4 points for monitoring pedagogical documentation in the school, and its rate was 52%.

E. Communication in Teaching and Learning: Communication in teaching and learning is the most fundamental and vital axis in educational communication processes (Lopez, 2017). Effective communication occurs when knowledge and skills are transferred to the learner. The elements of learning and contact must be complete so that the message is clear, and the tool is diverse and technical, represents an element that attracts the learner's attention, and facilitates the delivery of the message quickly and in a variety of ways. The results of the questionnaire and the notecard indicate a percentage of 64%.

F. Educational Communication Technology: There is a close relationship between educational technology, communication technology, and the educational learning process. The scholarly communication elements are complemented by the availability of technological applications (Abebe, Bergen, & Shifera, 2018). Availability in a learning environment makes it easier for teachers and learners to employ them with high quality. Also, technology can update the communication activities of all previous axes (Williams, 2017). The percentage of this axis in monitoring has reached 40%.

4.2 Design

Based on the previous analysis stage of the level of activating the communicative activities in the school, the design stage of the proposed model comes to consider the weaknesses detected by analyzing the cardiac measurement results of the areas of communication activities. The following are the main elements of the proposed model that was applied:

- Work on several applications for Web 2.0 such as YouTube, Facebook, and Instagram, and employ these applications in many communication activities within the school, which include educational events, communication activities, educational media, and documenting many events through the uses of Facebook and Instagram because of the importance of these operations (Bogdan, Pop, & Holotescu, 2019).
- More employing augmented and virtual reality applications by training school teachers to use and engage these applications in learning and teaching (Sharma & Unger, 2016).
- The educational portal system and the correspondence system: The Ministry of Education provides these two systems to all schools through which it is possible to achieve many of the desired educational communication through the arrival of all teachers, the school administration, students, and parents in the educational portal platform.
- Learning Management System (LMS), which makes it easy for the learner to access the prescribed educational contents, educational activities, and various sources. The learner's work is evaluated through this system, and he can get feedback on his performance, ease of communication with the teacher and others (Alkhataba, Abdul-Hamid, & Ibrahim, 2018).

This proposed model includes a precise detail of the desired processes and procedures in each of the six communication axes (Hohmann, 2019). This model contains several technological applications that enhance all axes. Emphasizes the interaction between the elements of the communication process and the educational process inside and outside the school and between the school, the local community, and the beneficiary and target groups of the school the importance of online digital elements in promoting cooperation activities across groups in various ways. The necessity of strengthening the school's external links becomes essential by enhancing the role of educational media. Therefore, the proposed model considers including all aspects of communication and its various activities and procedures. Finger 2 explains the proposed model of communication activities.
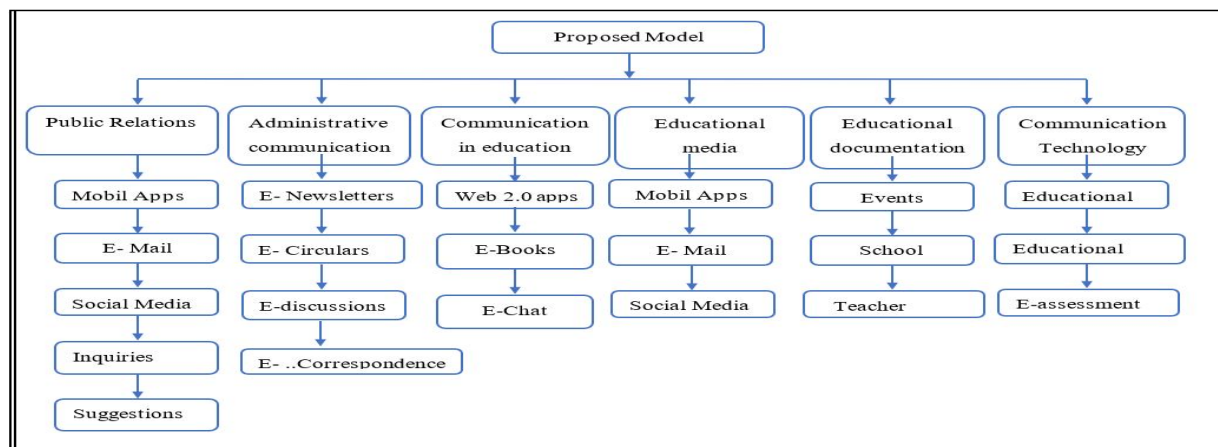
Figure 2. Proposed Model of communication activities.

4.3 Implementation and evaluation

In this stage, each axis will be in detail, with a suggested model explaining it as follows:

4.3.1 Public Relations

The need for the school is to devote significant attention to public relations operations and hiring an employee responsible for the Public Relations Department (Hohmann, 2019). The department includes a team of employees who can achieve the school's plan in this aspect. Moreover, it is necessary to pay attention to public relations in an educational institution as a significant factor in ensuring its success and continuity of development. Figure 3 explains the model for this field.

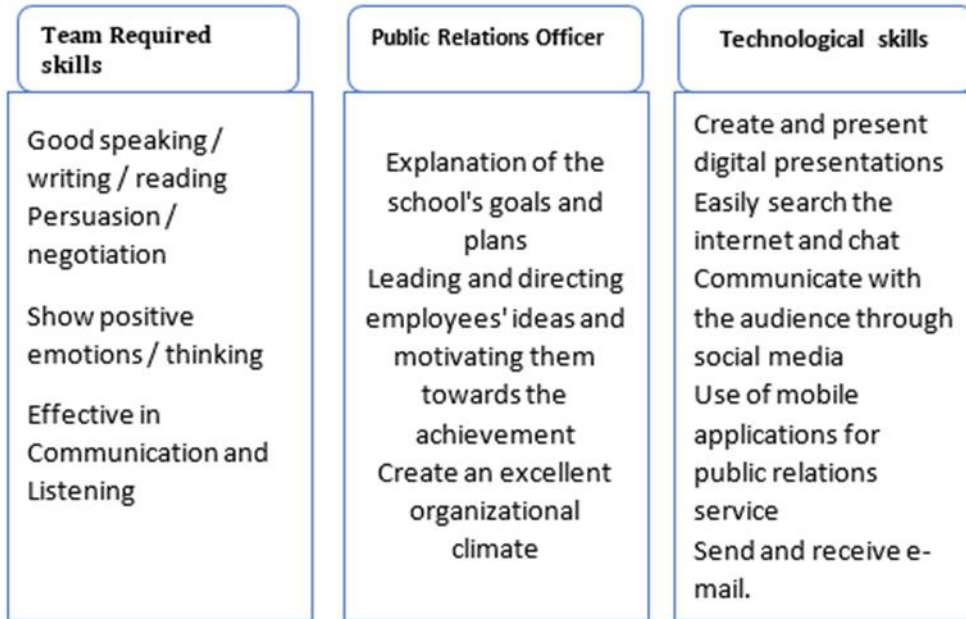| Team Required skills	Public Relations Officer	Technological skills
Good speaking / writing / reading Persuasion / negotiation Show positive emotions / thinking Effective in Communication and Listening	Explanation of the school's goals and plans Leading and directing employees' ideas and motivating them towards the achievement Create an excellent organizational climate	Create and present digital presentations Easily search the internet and chat Communicate with the audience through social media Use of mobile applications for public relations service Send and receive e-mail.

Figure 3. Public Relations Model.

4.3.2 Administrative Communication

School principals and the executive body must have the skills that enhance the role of leadership and achieve the overall quality objectives, and among those skills are communication skills (Bayram, 2017). In this axis, the researchers suggest activating administrative communication by qualifying all employees of the school administration, headed by the school principal. Enabling its primary role in updating and developing the school's administrative communication processes, the researchers formulate a proposed model for updating the communication activities in the axis of organizational communication through Figure 4.
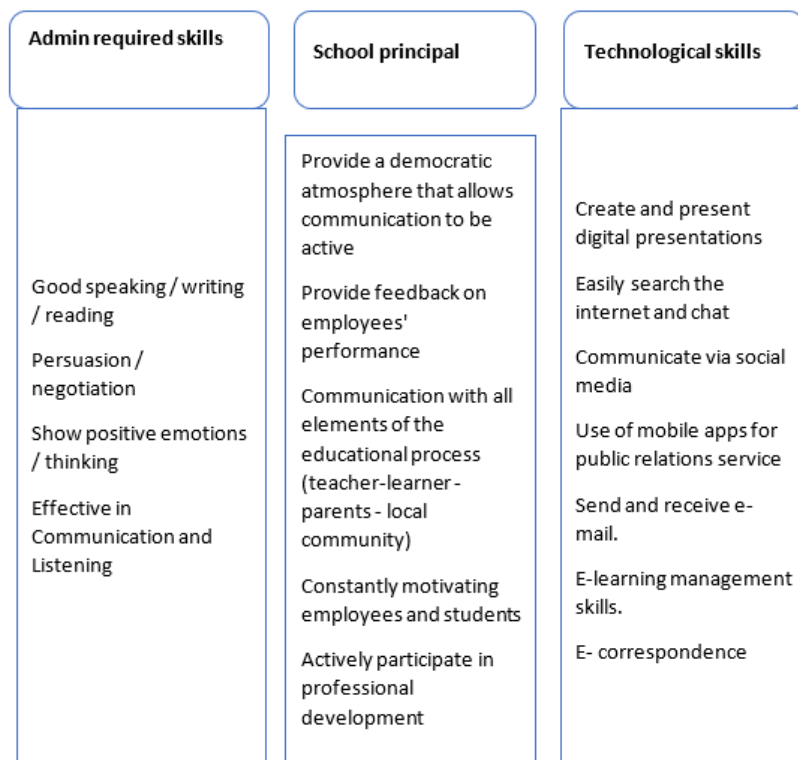

Admin required skills	School principal	Technological skills
Good speaking / writing / reading Persuasion / negotiation Show positive emotions / thinking Effective in Communication and Listening	Provide a democratic atmosphere that allows communication to be active Provide feedback on employees' performance Communication with all elements of the educational process (teacher-learner - parents - local community) Constantly motivating employees and students Actively participate in professional development	Create and present digital presentations Easily search the internet and chat Communicate via social media Use of mobile apps for public relations service Send and receive e-mail. E-learning management skills. E- correspondence

Figure 4. Administrative communication model.

4.3.3 Educational Media

The operations carried out by schools in the aspect of educational media contribute to expanding the school audience (Hohmann, 2019). It also provides the delivery of all its activities to the students' parents when the school pursues an effective educational media plan that contributes to the delivery of media messages in the right way. Therefore, the goal is achieved, and the elements of effective educational communication are supported. Figure 5 follows a suggested model for updating the communication activities in the educational media axis.
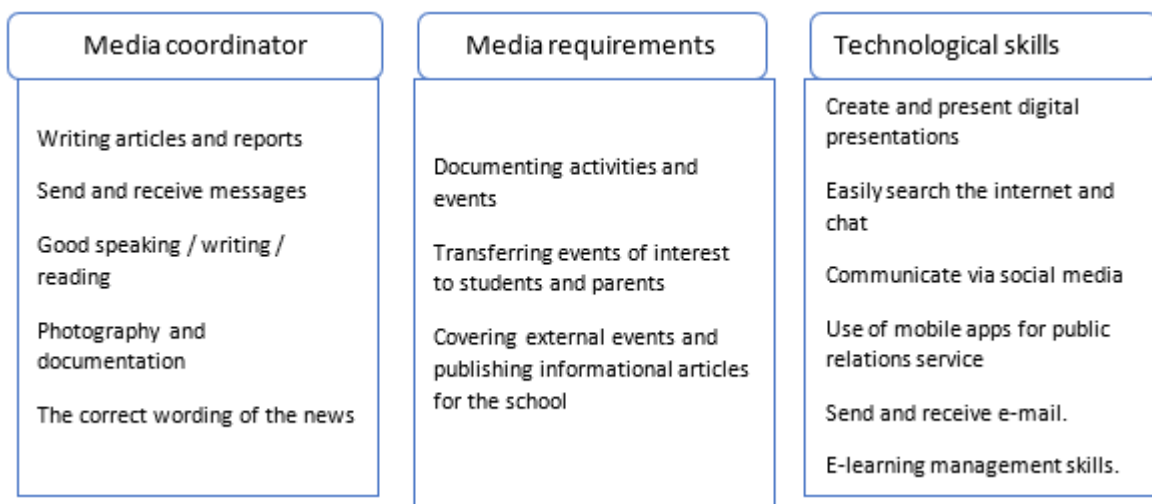
Media coordinator	Media requirements	Technological skills
Writing articles and reports Send and receive messages Good speaking / writing / reading Photography and documentation The correct wording of the news	Documenting activities and events Transferring events of interest to students and parents Covering external events and publishing informational articles for the school	Create and present digital presentations Easily search the internet and chat Communicate via social media Use of mobile apps for public relations service Send and receive e-mail. E-learning management skills.

Figure 5. Educational Media model.

4.3.4 Educational documentation

Educational institution that seeks to document its work so pedagogical documentation must develop within the school. The documentation that followed must be sound documentation based on scientific foundations and be clear of features and elements capable of conveying a clear and correct image to the recipient in a more systematic way. Therefore, the school must develop a form for documenting various events that includes all the information on the subject of documentation. Documentation makes educational communication based on a correct basis without confusion or confusion from the audience, as proper documentation determines the connection within the classroom accurately and clearly, and monitors problems in the educational process and easy access to solutions. Figure 6 illustrates this proposed model.
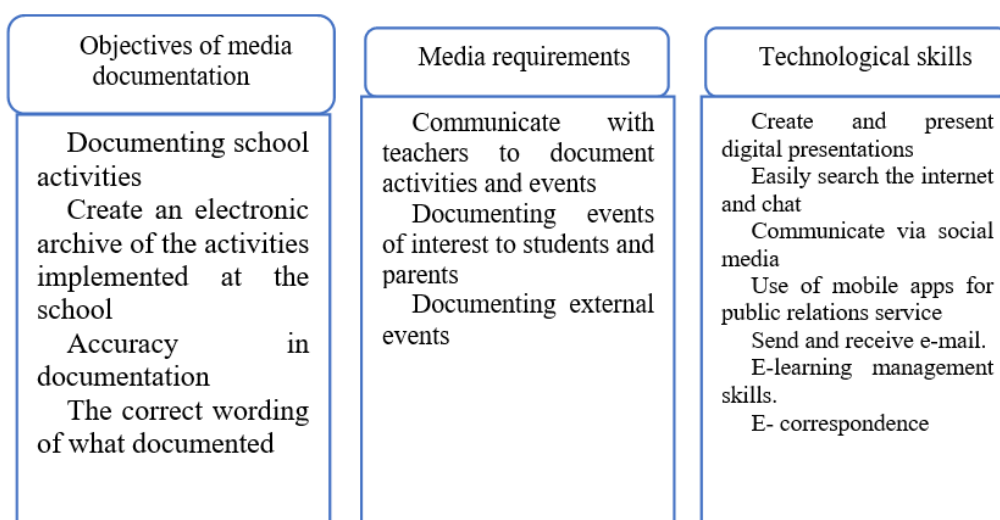
Objectives of media documentation	Media requirements	Technological skills
Documenting school activities Create an electronic archive of the activities implemented at the school Accuracy in documentation The correct wording of what documented	Communicate with teachers to document activities and events Documenting events of interest to students and parents Documenting external events	Create and present digital presentations Easily search the internet and chat Communicate via social media Use of mobile apps for public relations service Send and receive e-mail. E-learning management skills. E- correspondence

Figure 6. Educational documentation model.

4.3.5 Communication in teaching and learning

Technology and its use in the educational process, especially in the process of educational communication and increasing its effectiveness, is an essential element in the current era due to its provision of means and technologies that improve the ability of interaction between teacher and learner (Khalil & Ebner, 2017). Adopting technology in the development of the teaching and learning processes and making them more accessible and comfortable. Therefore, this proposal to increase communication in teaching and learning processes saves time and effort for both teacher and learner and helps to communicate inside the classroom.

This developing programs, activities, and lessons that are available to the learner and the parent. The learner can benefit from them at any time and place, where programmed lessons are placed for students using augmented reality techniques and interactive e-books provided for all the study materials and topics included (Mandeville, Ho, & Valdez, 2018). Technology enables the learner to interact with it and make the most of it. Learners and parents can communicate with the teacher through questions or inquiries that the teacher answers when he looks at them to facilitate the understanding process. From here, it becomes clear to the researchers that all the elements of the communication process are available, including the sender, receiver, message, feedback, and communication channel. Through this model, interference is reduced, and the effectiveness of communication activities increases. We find technology that considers the individual differences in student learning according to its speed and capabilities, which is one of the most critical characteristics of e-learning. Figure 7 represents the proposed model for communication in teaching and learning.
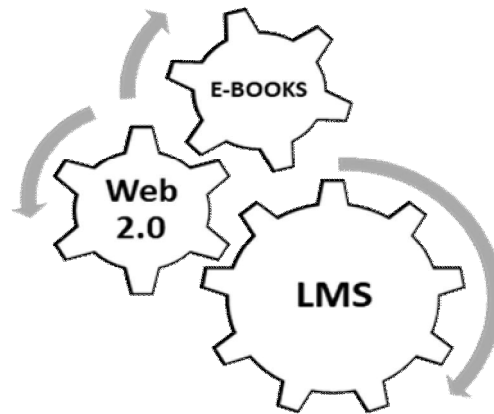

Figure 7. Teaching and Learning Model.

4.3.6 Educational communication technology

The researchers prepared a proposed model for updating the communication activities in this axis, based on strengthening educational communication technology within the classroom environment and through Web 2.0 applications according to the general proposed model. Figure 8 represents a model for the scholarly communication technology axis.
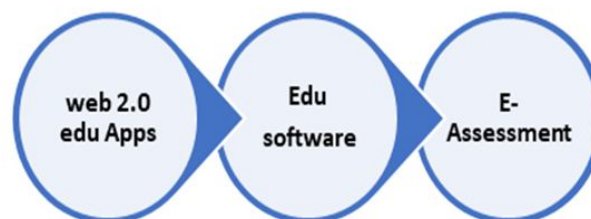

Figure 8. Educational communication technology Model.

5   Results

The proposed model has been applied in the six areas to activate and update the educational communication activities. This study was in the school during a full academic year, where the cardiac

measurement of the level of communicative activities began in the school (Hohmann, 2019). A model was proposed that aims to develop these activities effectively. The field application of the model was carried out from the beginning of the academic year 2018/2019 at Al-Manara Private School. The post-application process is followed by the second semester of the year 201/2019. Table 2 presents the percentage of activation of all targeted aspects of the school community.

Table 2 shows differences in the average percentage of the six axes of the school's communicative activities through the dimensional measurement made after applying the proposed model. Concerning communication activities in learning and education, we find that the average percentage increased by 15%, indicating the proposed model's effectiveness for this axis. The researchers found statistically significant differences between cardiac measurement and post-measurement in educational media by 21%. The efficacy of pedagogical documentation activities increased by 20%. While the scholarly communication technology had the largest share in terms of size of the increase in total percentage, which amounted to 44%, almost double the rate in the cardiac measurement before applying the proposed model. Administrative communication also increased by 13%, while the increase in public relations was only 8%, as it is considered the lowest axis in the growth rate.

NO	Communication area	Part (1) percentage	Part (2) percentage	Part (3) percentage	Average area percentage
1	Communication activities in education	78%	79%	80%	79%
2	Educational media activities	77%	78%	79%	76%
3	Educational documentation	72%	71%	73%	72%
4	Educational Communication Technology	88%	81%	83%	84%
5	Administrative contact	73%	74%	72%	73%
6	Public relations	60%	55%	52%	56%

Table 2. Post-measurement analysis.

6   Discussion & Conclusion

The current study showed the effectiveness of employing Web 2.0 tools and applications in developing communication activities in primary schools. By this, we have achieved the first objective of this study. The results of the study confirmed the proposed model in improving scholarly communication in learning and teaching. There is a remarkable distinction in educational communication technology, which mainly depends on many applications of the second generation of the Web, such as e-mail and social networking sites. Hence we have achieved the second objective of the study. The effectiveness of educational documentation activities has increased thanks to the many electronic archiving tools provided by Web 2.0. Administrative communication is the pillar of communication operations management, whose actions have greatly improved through results. Educational media and public relations also developed educational communication activities included in them significantly. The researchers concluded that communication activities need to be modernized by employing modern technologies and more applications of Web 2.0 and Web 3.0. Thus, we have achieved the remaining objective of the study.

References

Abebe, L., Bergen, N., & Shifera, A. (2018). Appendix 8 EPHA presentation: application of a qualitative rapid assessment approach to inform community-responsive information, education and communication activities.

Abu Sultan, Y. S., Al Shobaki, M. J., Abu-Naser, S. S., & El Talla, S. A. (2018). The Style of Leadership and Its Role in Determining the Pattern of Administrative Communication in Universities-Islamic University of Gaza as a Model.

Akarowhe, K. (2017). Information communication technology (ICT) in the educational system of the third world countries as a pivotal to meet global best practice in teaching and development. Am J Compt Sci Inform Technol, 5(2).

Alajmi, Q., Al-Sharafi, M. A., & Abuali, A. (2020). Smart learning gateways for Omani HEIs towards educational technology: benefits, challenges and solutions. Int. J. Inform. Technol. Lang. Stud, 4(1), 12-17 .

Alkhataba, E. H. A., Abdul-Hamid, S., & Ibrahim, B. (2018). Technology-supported online writing: an overview of six major Web 2.0 tools for collaborative-online writing. Arab World English Journal (AWEJ) Volume, 9.

Blau, I., & Hameiri, M. (2017). Ubiquitous mobile educational data management by teachers, students and parents: Does technology change school-family communication and parental involvement?. Education and Information Technologies, 22, 1231-1247.

Bogdan, R., Pop, N., & Holotescu, C. (2019, January). Using Web 2.0 technologies for teaching technical courses. In AIP Conference Proceedings (Vol. 2071, No. 1, p. 050003). AIP Publishing LLC.

Caliskan, Semih, Zafer Guney, Regina Sakhieva, Dinara Vasbieva, and Natalia Zaitseva. "Teachers' views on the availability of Web 2.0 tools in education." International Journal of Emerging Technologies in Learning (iJET) 14, no. 22 (2019): 70-81.

Chaisanit, S. (2018). A REVIEW Of EDUCATIONAL COMMUNICATION MODEL A PRACTICAL TEACHING IN THE THAI CLASSROOM GUIDE. Journal of Humanities and Social Sciences Thonburi University, 12, 9-18.

Conderman, G. (2019). Notecards: An Effective Study Tool. The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 92(3), 85-92.

De Rossi, M., & Zorzi, E. (2019). Dialogue exchanges between children's centers and families: building digital narratives with Digital Storytelling for educational documentation. Interdisciplinary Journal of Family Studies, 24(1).

Faizi, R. (2018). Moroccan Higher Education Students' and Teachers' Perceptions towards Using Web 2.0 Technologies in Language Learning and Teaching. Knowledge Management & E-Learning, 10, 86-96.

Ferraro, S. (2018). Is information and communication technology satisfying educational needs at school?. Computers & Education, 122, 194-204.

Ferraro, S. (2018). Is information and communication technology satisfying educational needs at school?. Computers & Education, 122, 194-204.

Garrote, A., Dessemontet, R. S., & Opitz, E. M. (2017). Facilitating the social participation of pupils with special educational needs in mainstream schools: A review of school-based interventions. Educational Research Review, 20, 12-23.

Gençtürk, A. T., & Korucu, A. T. (2017). The Effects of Web 2.0 Technologies Usage in Programming Languages Lesson on the Academic Success, Interrogative Learning Skills and Attitudes of Students towards Programming Languages. Higher Education Studies, 7, 114-124.

Hohmann, B. (2019). Integrity Advisors and the Development of Administrative Communication Culture. European Journal of Multidisciplinary Studies, 4(1).

Husam, R., Naser, S. S. A., El Talla, S. A., & Al Shobaki, M. J. (2018). Information Technology Role in Determining Communication Style Prevalent Among Al-Azhar University Administrative Staff.

Karahan, E., & Roehrig, G. (2016). Use of Web 2.0 technologies to enhance learning experiences in alternative school settings. International Journal of Education in Mathematics, Science and Technology, 4(4), 272-283.

Krosnick, J. A. (2018). Questionnaire design. In The Palgrave handbook of survey research (pp. 439-455). Palgrave Macmillan, Cham.

Little, D., & Kirwan, D. (2019). Engaging with Linguistic Diversity: A Study of Educational Inclusion in an Irish Primary School. Bloomsbury Publishing.

Mkandawire, S. B. (2019). Selected Common Methods and Tools for Data Collection in Research. Selected Readings in Education, 2, 143-153.

Natale, K., & Lubniewski, K. (2018). Use of communication and technology among educational professionals and families. International Electronic Journal of Elementary Education, 10, 377-384.

Natale, K., & Lubniewski, K. (2018). Use of communication and technology among educational professionals and families. International Electronic Journal of Elementary Education, 10, 377-384.

Niegowski, J. A., & Lafortune, M. A. (2017).Systems and methods for storing and analyzing golf data, including community and individual golf data collection and storage at a central hub. Patent No. 9,661,894. Washington, DC: U.S. Patent and Trademark Office.

Ohei, K. N., & Brink, R. (2019). Web 3.0 and web 2.0 technologies in higher educational institute: Methodological concept towards a framework development for adoption. International Journal for Infonomics (IJI), 12, 1841-1853.

Paradis, E., O'Brien, B., Nimmon, L., Bandiera, G., & Martimianakis, M. A. (2016). Design: selection of data collection methods. Journal of graduate medical education, 8(2), 263-264.

Schabenberger, O., & Gotway, C. A. (2017). Statistical methods for spatial data analysis. CRC press.

Sharma, S. A., & Unger, S. (2016). Employing Web 2.0 technologies to support students' academic vocabulary acquisition. Michigan Reading Journal, 48, 17-29.

Sivam, S. P. S. S., Bhat, M. D. J., Natarajan, S., & Chauhan, N. (2018). Analysis of residual stresses, thermal stresses, cutting forces and other output responses of face milling operation on ZE41 Magnesium alloy. Int. J. Modern Manuf. Tech, 10(1), 92-100.

Yuen, A. H., & Hew, T. K. (2018). Information and communication technology in educational policies in the Asian region. Handbook of information technology in primary and secondary education, 1-20.