

## Mobile Application for University Courses of Journalism and Research

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**Abstract**—One of the most common activities of university students in the areas of journalism and communication is to write news or research articles for their classes. To do this, students apply the concepts they studied in their courses to do fieldwork, conduct research, and to write the news. To facilitate this academic activity, we developed the InContext mobile application (app), which contains preloaded templates to guide the student through the process of news writing and research reporting. This application allows a student to add audio, video files, photos and link this to the information. The first stage of our research was for diagnostic purposes. It consisted of a review of the reports and textual articles prepared by students to identify the necessary characteristics that should be considered for the templates we were designing. The second stage consisted of the development of the application and its testing to get feedback and make necessary adjustments to the app. The results so far indicate that, with the teacher's guidance, students follow the required structure of the template, but elements of formatting that could be predicted with the use of the app escape them. Ideally, the app will allow the student to focus on the quality of the content. The future evolution of the app envisages redesigning it to include activities that promote the development of cognitive skills through the use of the app.

**Keywords** - *higher education; educational research; mobile applications; journalism; educational innovation.*

### I. INTRODUCTION

Educational institutions are responsible for providing their students with the tools and skills that give them the competencies they need to be future professionals in journalism and communication [1]. The students have to be able to work with state-of-art technology, inform society, and know how to request and obtain information. Similarly, professionals in creative industries must be able to respond to media outlet demands. Changes in how information is received and disseminated have created a new need: universities must update the courses offered to students in curricula where communication is an integral part of their studies. The variations in training are a result of different trends in how people read and consume information. Nowadays, the use of portable devices such as tablets, mobile phones, and laptops allows access to online journals and magazines. In Mexico, there are 79.1 million Internet users, and 89% of the connections are through mobile

phones [2]. The use of social media is very high (89%), and there is a high percentage of users (82%) searching for information online [2]. This is why the technology provided by the cell phone can be incorporated into teaching, as young Mexican students use it daily. To bring about change, teachers, when doing course design, must focus their attention on learning experiences in which technology can be integrated into them [3].

This paper presents the results of our study. The work is structured as follows. In section II, we present the theoretical background. Section III provides a description of the methodology employed. Section IV presents the research results, and Section V presents the conclusion of this work.

### II. THEORETICAL BACKGROUND

Heutagogy is self-determined learning, focused on the development of capabilities and capacity of the student. Heutagogy is appropriate to the needs of learners in this century [4].

The theoretical-conceptual perspective of heutagogy recognizes the need to be flexible in learning, in the use of resources, and in the facilitation or guidance that a teacher provides to students. Heutagogy is defined by the idea that the student can design and negotiate his/her own learning. The student determines what is most essential and subsequently arranges his/her reading and evaluation assignments [4].

As an example, the journalism schools of the Auckland University of Technology (AUT) in New Zealand use heutagogy as a teaching method in their social media courses in journalism. This method prepares students through a new style of educating that incorporates dealing with the vast amount of information available on the Internet. In this case, a heutagogic framework provides the flexibility for students to perform their course work using existing technological tools familiar to them [5].

Along these lines, this work proposes the hypothesis that the use of mobile applications is useful in academics to enhance critical thinking [6]. There is evidence in this regard: Reen and Ramnarayan's research with medical students at Manipal University, India, is an example [7]. The authors asked medical students to use social media to work on their projects. They concluded that the heutagogic method allowed their students to generate learning products

and develop critical thinking, so the union of this learning methodology with technology can be considered a key to learning for 21st-century youth [7].

According to Crittenden et al. [8], it is crucial that university students know how to use digital technology such as artificial intelligence, augmented reality, drones, the Internet of Things, robots, virtual reality, and 3D printing, among others. Technology applied in the classroom to theory helps students develop critical thinking and creativity, so they can generate value in the professional arena. The authors add that one of the criticisms of technology has been that it can be distracting; however, distraction is also present in traditional teaching [8].

Today's world is characterized by an abundance of data, shortened decision times, and the elimination of geographical boundaries brought about by information technologies [9]. Foreseeably, communication technologies will remain a permanent part of the continuous connectivity in people's work. [10][11]. For these reasons, educators must guide the creators of future content toward the skills of communication and precision. To that end, we developed a mobile application called *InContext*, which specifically targets those competencies. With *InContext*, students have many features now like standard templates, guides, focus group formats, and the key questions and components needed to write journalistic articles or editorials, among others.

Educators have the advantage of being able to leverage student engagement in the classroom through the use of technology. Making the students co-responsible for learning the topics in class leads to their greater involvement. In our research, we see that this involvement occurs when the student, as a user of our app, can add photographs, audio, and video files to content with a smartphone or tablet at the time of the event. These tools, like Google Drive, facilitate the collection of information.

The objective of this study was to design this mobile app with interactive formats that assist the beginning of the writing process or the beginning of social research. *InContext* lets the student use one of the pre-loaded, interactive multimedia templates that correspond to the different journalistic genres and research designs to generate content suitable for journalism or social research. The target users were students of journalism and communication at Tecnológico de Monterrey, Mexico, during the winter 2018 and spring 2019 semesters.

### III. METHODOLOGY

#### A. Participants

The students who participated in the first two stages were men and women between 18 and 25 years old, with 21 being the average age. They were enrolled in various curricula such as Journalism, Communication, International Relations, Advertising, Political Science, and Psychology. All were taking the courses in research and journalism

between the second and fifth semesters of their professional curricula on the Monterrey campus of Tecnológico de Monterrey. The risks associated with this experiment were minimal because no personal or sensitive information was requested from them during the study.

In the first stage, developed in the winter 2018 semester, 161 written articles prepared by 305 students enrolled in five courses were taken as a reference for analysis. The classes were Quantitative Methods for Social Research, Research Journalism, Digital Journalism, Qualitative Methods Research, Advertising and Comprehensive Marketing. The second stage, in the spring 2019 semester, entailed the design of the application and its use by some of the students (n=141).

The *InContext* mobile application has 4 templates for research courses and 16 templates for journalism courses. It allows the students to enter and format their report information, including surveys, interviews, content analyses, and various things relating to news reports, like chronicles, stories, semblances, etc.

#### B. Procedure

Three stages were established for this investigation. The first was developed during September to December 2018 and aimed to identify the essential characteristics that an investigative report or a journalistic article should have. To do this, we reviewed works written by the students before using the technology. The second stage occurred from February to May 2019, in which different students tested the application and made adjustments, and the results of this stage are reported in this paper. The third stage will use control and experimental groups to check whether the use of the tool by the students promotes autonomous learning and develops the critical thinking in students to focus on the content of the reports and not just their forms or structures.

#### C. Tools

*InContext* is an application of specialized software containing custom-made templates for the primary genres of journalism and the elemental procedures of research methodology. The app guides the student to supply the relevant information for each of the points of the templates. The student adds the required multimedia material and sends the content via email or uploads it to the cloud. The use of the app directs the student to the bare minimum inputs necessary to start writing creative or informative text, and it allows the student to explore new ways to deliver content. Also, the app facilitates flexible learning because users can go at their own pace as they practice journalistic writing and conduct academic research.

Although *InContext* is a mobile-device application made explicitly for university students, future versions could be integrated as a suite in the Tec de Monterrey moodle-based learning platform.

This application is based on Laravel, bootstrap, html5, and progressive application techniques. It can be viewed on

Android, Apple, and Windows mobile devices. The app allows the student to access the summary of their contribution (frontend). The teacher can easily design templates, automatic reviews, assessments, and grading scales (backend).

Students access the app at [app.incontext.mx/login](http://app.incontext.mx/login), register, and then select the preloaded formats. Journalism students find specified templates (various formats for news, report, chronicle, review, semblance, conference, press conference, etc.). Research students find other templates (surveys, interviews, etc.).

Students follow the template, inserting title, author, date, sources, questions and answers, photographs, etc. Upon completion of the template, students generate a PDF file that can be downloaded.

Students enrolled in one of these courses have access to the tool and they select the format needed from 20 options.

Figure 1 shows the *InContext* screen to illustrate how students access the app. Figure 2 shows the dashboard where the students can select the specific template to use, and Figure 3 shows the screens with the survey form as an example. In that form, they find the elements that must be written, such as title and objective, theoretical background, and bibliography, etc. The student can attach photos, videos, audios, and links to the text documents they are preparing, and they can proceed at their own pace. *InContext* allows them to generate a PDF report that can be delivered in print or electronic form to the teacher or anyone.

#### IV. RESULTS

This initial review carried out was qualitative. We compared the research reports and the news stories that students prepared before using the application with the work they did after using it and considered some possible improvements in the tasks. In the case of research reports, better results were observed in two specific respects (Table I), namely, the manifest presence of the research objective and the demographic data of the study participants.

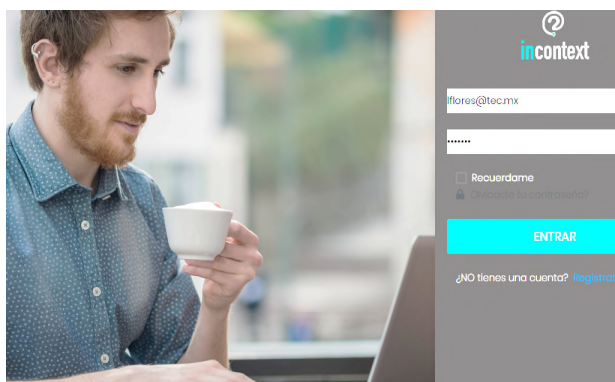


Figure 1. Access screen to the app.

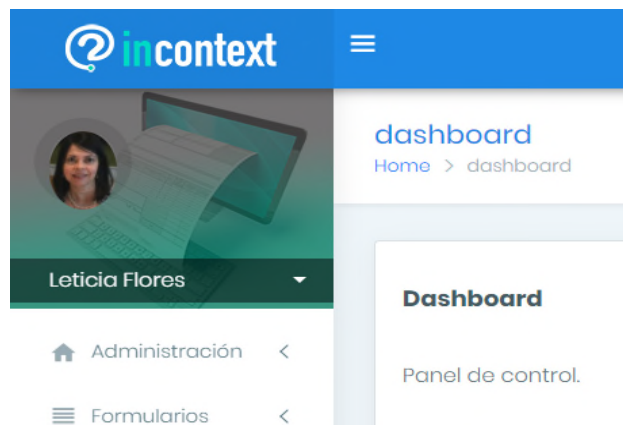


Figure 2. Student access to the dashboard and selection of forms.

In the same way, when reviewing the work of the journalism courses, it was possible to identify improvements with the use of the app (Table II), specifically in the presence of information sources, the news writer credits, and the inclusion of photographs. The application displays the items to be completed in the format, and, therefore, it is difficult to forget or omit their inclusion.

Table I shows the results of the exploratory study using a convenience sample. Please note the low number of students using the app was due to reduced attendance during the days of the study.

#### V. CONCLUSIONS

In the first two stages, the need to design the templates carefully was evident, as well as the usability of the application on both cell phones and computers. However, the most important thing was to identify whether the use of this technology not only facilitates the learning of formats, but also leads to reflection and analysis of the written content. These aspects will be reviewed in the future stage of this investigation.



Figure 3. Example of a template that starts the work.

TABLE I. HITS FOUND IN THE RESEARCH WORK WITHOUT APPLICATION AND USING IT

Research work	Without app	Using app
States the research objective	20/54	5/6
Specifies the demographics of the sample data	26/54	6/6
Total work reviewed:	54	6

TABLE II. HITS FOUND IN THE JOURNALISM EXERCISES WITHOUT APPLICATION AND USING IT

Journalism exercises	Without app	Using app
States the news sources	34/41	37/40
Includes photographs	34/41	36/40
Indicates the writer credit	32/41	40/40
Total work reviewed:	41	40

The results presented in this paper seem to align with those shown by Reen & Ramnarayan [7]; *InContext* facilitates student work by offering them a flexible environment where they can learn better. The results presented in this paper also supports the idea presented by Crittenden et al. [8] that technology is not always a distractor and can be used, instead, as a tool to increase concentration [8]. The results of this paper are encouraging. The research indicates that technology can help students focus; in this project, it offers them the elements to guide the development of writing and communicating using templates. Future work will allow us to test, in an experimental setting, how much these elements facilitate students' work and achievements.

Ideally, with the continuous repetition of exercises, students will incorporate into their knowledge the details of the formats and, on their own, will identify the usefulness of this application. It is hoped that teachers using the app can spend more time reviewing the relevance and the content of student work rather than worrying about the details of form.

The use of this type of technology highlights the importance of continuously updating the education for future

managers. The universities have to offer new educational strategies so that students participate more while they increase their self-efficacy [4]. The future communicators are today's students; therefore, universities have to offer the instructional strategies that are relevant to their future needs.

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