FACEBOOK POSTS AND DESIGN PEDAGOGY: AN EGYPTIAN CASE STUDY OF SOCIAL MEDIA COMMUNICATION IN SUPPORT OF AN ARCHITECTURAL STUDIO

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Abstract

The use of Facebook in support of higher education has been increasing since its inception. This is particularly significant in developing countries as universities do not always have adequate access to learning management systems. Facebook is also the social media platform that is most commonly used in support of architectural design studios to mitigate the ever-increasing numbers of student enrolment and budget cuts that tend to increase student-to-instructor ratios. The social media platform allows increased contact hours between faculty members and students of architectural departments, and enhances computer supported collaborations between its users, while increasing the levels of communication throughout the pedagogical design process. Although, numerous English-language academic articles have been published on the use of Facebook in higher education in general, to date only a handful of studies examine Facebook use in support of the traditional architectural design studio. An even smaller number of studies attempt to understand how post categories created on such Facebook groups may facilitate communication between faculty and students and/or peer-to-peer discussions; while few post categorization systems are proposed, these do not align with the particular nature of design education and architectural studio set-ups.

The purpose of this work is to therefore propose a framework to be used in the categorization of posts created in Facebook groups created to support architectural design studio education and tailored to the architectural studio context. This may further facilitate the understanding of communication occurring on such Facebook groups and may be used in further analyses. To achieve this, a two-stage qualitative methodology was used. The first stage consisted of researchers’ observations and a thematic analysis of posts posted on a closed Facebook group that is created in support of an architectural design studio in Cairo, Egypt which is the case study investigated in this research. The study investigates all posts made within the group for the duration of 3 academic years, which allowed the identification of 16 distinct categories. A follow-up survey was then conducted with a sample of students, to triangulate and validate the initially extracted categories in accordance with students’ preferences, which allowed the higher categorization of 4 broader categories, in which the initially extracted 16 categories could be re-organized. The classifications identified appear to be the most detailed in all the literature reviewed, and are potentially beneficial not only for enhancing computer supported communication in architectural education, but also valuable for enhancing the use of social media in design pedagogy in general.

Keywords: Facebook, Architectural design studio, Design Pedagogy, Egypt, Social Media.

1 FACEBOOK AND THE ARCHITECTURAL DESIGN STUDIO

The design studio is widely considered as the backbone and core of architectural education [1-5]. It is in this pedagogical space that architecture students tacitly acquire the necessary fundamentals of design [3], while also learning about the culture of architectural practice [6].

The traditional architectural design studio originates from the commonly-known 19th Century Ecole des Beaux-Arts atelier model; which is based on the master-apprentice relationship and rapport that develop between teacher and student [1, 3, 7], through the process of developing design solutions through a series of iterations. The atelier studio model was again revisited in the early 20th Century by the German Bauhaus School which placed a heavier emphasis on technical design skills [3, 7]. This shift in focus necessitated “a continuous process of critical reflection by the learner and input by others (tutors, peers and external critics)” via discussion groups, informal desk crits, input from peers in the same studio as well as formal mechanisms of evaluation [3].
The contemporary model of the traditional design studio does not differ significantly from the afore-described precedent historical models [3] [7]. Students are exposed to and involved in a myriad of interlinked processes in a learning-by-doing trajectory, including the use of design precedents, rapid generation of design ideas, handling design constraints and reliance on both analogue and digital media [1], [8]. Notwithstanding, the traditional design studio model is increasingly becoming the subject of much speculation and criticism [9]. Nowadays, design studio hours are not enough to allow for lengthy discussions, and tutors are only able to provide minimal feedback to a small number of students [10]. Mechanisms of desk crits, juries and presentations, which are an integral part of student socialization in the contemporary model of the architectural design studio are often considered a source of emotional stress for students, which may have a negative impact on students' overall knowledge acquisition and development. Such issues are even further exacerbated by budget cuts and diminishing resources that higher education institutions are nowadays subjected to. This is particularly pertinent to the design studio, which is generally regarded as a more costly teaching model than the traditional classroom setup [11]. As a consequence, institutions tend to increase student-to-staff ratios, reducing the amount of time dedicated to each student in studio and placing greater stresses on tutors' time [12-13].

In attempts to resolve some of the aforementioned issues, and to bridge the gap between pedagogical traditions and requirements of contemporary architectural practice, the educational community is progressively shifting attentions toward the internet, and exploring potentials offered by social media tools and platforms that have become an intrinsic element of students’ daily social lives. There is growing belief in the potential of social networking tools to enhance the design process; both within the physical boundaries of the studio and beyond the university campus [7], [13]. In addition to features of social media that enhance tutor-student and peer-to-peer collaboration and communication, belief in the merit of social media resides in the provision of unrestricted, 24-hour interaction that the platforms have to offer [3] [10]. Various social media platforms have been used in support of design education in the past; including Flickr [11], the Ning platform [15] and deviantART [16]. Skype tends to be cited as the platform of choice for voice calls and/or video-conferencing [11-12]. However, Facebook is observed to be the social media platform most commonly used in support of architectural design studios [3,4, 7, 10, 13, 17].

2 RESEARCH PROBLEM & AIMS

There are nearly 2 billion active Facebook users worldwide [18]. Facebook has become one of the most trafficked social media platforms on the World-Wide-Web [19], and its extreme popularity has led to its widespread proliferation and use. Consequently, it is often found that most students are already Facebook users and are accustomed to using the platform as part of their daily lives [7] [20]. The prevalent selection of Facebook over other social media platform available on the internet, has led the focus of many studies to investigate the quasi-professional use of Facebook in the educational context to understand its use and impact within higher education (e.g. [21-23].

Nevertheless, research publications narrating how Facebook is used to support the architectural design studio in an architectural education context remain limited. Morkel [7, 13], uses qualitative methods to understand students’ opinions of their experience using Facebook as an educational support. Güler [12] uses statistics to compare between the overall effectiveness of a traditional design studio and an online, Facebook-lead studio, and also collects data surrounding students’ opinions using questionnaires. McCarthy [17] details how Facebook was used to set up national and international cross-university partnerships that would function as a virtual design classroom that served as a work-in-progress gallery of students’ design proposals and developments.

To date and to the best of the authors’ knowledge, the only work that closely examines how tutor-student and peer-to-peer communication is facilitated through the use of multiple Facebook groups created to support an architectural design studio is the work presented in Tate and Osborne [3]. The Facebook groups were periodically monitored throughout a single semester, to understand the nature of these interactions and to gauge effectiveness of Facebook use in architectural tertiary education. A five-point categorization, consisting of ‘excitement,’ ‘problem,’ ‘solution,’ ‘joke’ and ‘other’ was used in this study to sort group content. Results of this study indicate that most posts (41.51%) fit into the ‘other’ category, followed by ‘problem,’ ‘excitement’ and ‘solution’ categories respectively. A negligible number of posts fit into the ‘joke’ category.

The idea of proposing a classification system to categorize posts in [3], to better understand how Facebook group users communicate as part of the design studio context is a noteworthy contribution.
Nevertheless, it is important to note that this classification system proposed by Tate and Osborne [3] is originally derived from English & Duncan-Howell’s study [24] belonging to the business education context, and does not directly relate to the architectural design studio context which, as the introductory section of this article has elaborated, presents a very particular model of education that is not commonly shared in educational disciplines that rely on a traditional classroom setup. Moore-Russo, Radosta, Martin and Hamilton [25] provide an alternate categorization of Facebook posts into three broad categories which are further subdivided into 11 sub-categories (Fig. 1). This sub-categorization provides a more comprehensive framework than those described in [3 and 24], and may be used to achieve a more granular analysis of communication occurring on Facebook groups. Nevertheless, while the framework described in [25] is used to analyse the interactions occurring on the Facebook group of a graduate-level educational programme, it is originally derived from a market research context which, once again, is not tailored to architectural education.

![Figure 1. Broad categories and sub-categories of Facebook group posts as proposed in Moore-Russo, Radosta, Martin and Hamilton [25].](image)

Our review of the literature reveals that a categorization framework that may be used to understand how students and instructors communicate on Facebook groups created in support of traditional architectural design studios ceases to exist. To this end, while sharing the methodological standpoint of [3], the purpose of this present contribution is to propose a categorization framework tailored to the architectural design studio context. Such a framework may then be used in subsequent studies analysing the content of Facebook groups in support of architectural design studios, and may help to provide a more detailed snapshot of how communication occurs across such groups.

### 3 METHODOLOGY

The methodology used to set up the framework proposed in this contribution was based on a case study in which a Facebook group has been set up and used to support the teaching of an architectural design studio, detailed in section 3.1. Procedures followed for data-collection and analyses consisted of two consecutive stages:

1. Researchers’ observation and a thematic analysis of posts created and its content on the Facebook group. This allowed an initial extraction of post categories.
2. A field survey conducted with students to validate and further develop the categories initially extracted based on student preferences. This was used to sub-group extracted categories into broad categories.

#### 3.1 Case study

The study focuses on a closed Facebook group for the duration of 3 academic years as the case study for this investigation. The Facebook group under study is a private group created to support one of the studios of the academic module entitled Architectural Design II. The module is taught as part of the undergraduate curriculum at the Department of Architectural Engineering and Environmental Design at the Arab Academy for Science, Technology and Maritime Transport (AASTMT), in Cairo, Egypt.

Architectural Design II is the second core architectural design studio module within the stream of ‘design,’ modules, which is considered the central stream of the RIBA-accredited programme. Architectural Design II is intended to increase the complexity that students are exposed to in dealing with design constraints, while closely examining the surrounding context and taking it into consideration in students’ proposed design solutions. The specific studio under study is led by the first
The author of this paper, who has been teaching this studio since 2013. The studio is held two days a week, for four hours each day.

A private Facebook group named AAST.Design II was created in support of the studio. In 2013 the first author of this paper, who is also its group administrator, created the group at the same time he started leading the studio. The Facebook group was created with the intention of increasing contact time between the instructors and students beyond 8 hours per week. The group was not intended in any way to replace physical studio contact times, as students’ attendance remained mandatory. Between September 2013 and September 2019, the group had gradually accumulated 339 members throughout the six-year period, all of whom were students who had enrolled on the Architectural Design II module, or who had been teaching assistant on the module, since the first author started leading the module.

The Facebook group was considered supplementary to the physical design studio; Students were strongly encouraged to use the group effectively by creating their own posts and/or to ask questions, which the instructors would then respond to. Despite this strong encouragement to remain active on the Facebook group, engagement was not mandatory, and no form of formal assessment or incentive was used to encourage the interaction. Nevertheless, for purposes of research ethics and full disclosure, students were informed that their use of the Facebook group would be monitored for the purpose of this research study.

3.2 Data collection & analysis

3.2.1 Researchers’ observation and thematic analysis of posts

The Facebook group was treated as an archive of posts. The period of the 3 most recent academic years, i.e. 8 academic semesters between September 2016 and May 2019, of the use of the group were under scrutiny for this study. This period of 8 semesters produced ample amounts of quantitative data, and at a high level of granularity, as the studio was run by the first author of this paper for 4 semesters out of the 8 academic semesters, indicated by the number of students registered to the studio shown in Table 1. The group however was used by its members and posts were made in the duration of the semesters when the instructor was running alternative modules and more senior design studios of the AASTMT curriculum.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester</td>
<td>Fall</td>
<td>Spring</td>
<td>Summer</td>
<td>Fall</td>
</tr>
<tr>
<td>Number of Students</td>
<td>40</td>
<td>47</td>
<td>0</td>
<td>41</td>
</tr>
<tr>
<td>Total Number of Posts</td>
<td>247</td>
<td>138</td>
<td>9</td>
<td>167</td>
</tr>
</tbody>
</table>

The researchers observed the activities occurring on the Facebook group between the aforementioned dates, and all 796 posts made on the group within the studied period were coded to understand their different types. The content and attachments of each post were observed. Data was extracted from the Facebook group and inserted into a Microsoft Excel spreadsheet (table 2), identifying the date of post, who posted it, and whether they were female or male, and whether they were faculty or students. Also posts made in specific semesters by students from academic cohorts who had been enrolled in the studio during previous academic years were identified.

<table>
<thead>
<tr>
<th>Year</th>
<th>Term</th>
<th>Date</th>
<th>Admin.</th>
<th>Who</th>
<th>Name</th>
<th>Gender</th>
<th>Current/previous</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018/2019</td>
<td>1</td>
<td>17-Nov-18</td>
<td>2</td>
<td>Student</td>
<td>AA</td>
<td>Male</td>
<td>Current</td>
<td>“Attached is the Combined Research in A5 size”</td>
</tr>
<tr>
<td>2018/2019</td>
<td>1</td>
<td>24-Nov-18</td>
<td>1</td>
<td>Faculty</td>
<td>RB</td>
<td>Male</td>
<td>Current</td>
<td>“Please bring with you tomorrow tracing paper”</td>
</tr>
</tbody>
</table>
Posts were coded in chronological order from the earliest until the most recent. To ensure internal reliability and to minimize errors, the first author of this paper conducted the entire coding procedure. The coding process allowed the authors of this paper to identify 16 different categories of posts used as mean of communication between the different users of the group. Those categories will be presented in the upcoming section of this paper.

3.2.2 Field Surveys

Upon the identification of the categories of posts, a survey was conducted with group users, to understand more about how the students used the Facebook group. Open-ended questionnaires were conducted with 54 students to collect qualitative data regarding the usefulness and shortcomings of the posts created on the group from their point of view. Students were also asked about which individual post they considered the most useful and why. This allowed for further development and refinement of categories initially identified in section 4.1, and the creation of a broader four-point categorization of the initially identified categories (sections 4.2 and 4.3).

4 RESULTS

4.1 Identified categories

All 796 posts made on the group throughout the study period appear to fall under 16 categories. The categories and their corresponding descriptions and the percentage of their use are all as shown in Table 3 below.

<table>
<thead>
<tr>
<th>Post Category</th>
<th>Description</th>
<th>% of posts created</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Faculty instructions</td>
<td>Instructions about submission times, procedure, format, etc.</td>
<td>10</td>
</tr>
<tr>
<td>2 Tutor announcements</td>
<td>Announcing office hours, collective activities.</td>
<td>8</td>
</tr>
<tr>
<td>3 Design precedents</td>
<td>Examples of projects as images, drawings, or shots.</td>
<td>8</td>
</tr>
<tr>
<td>4 Presentation precedents</td>
<td>Presentation of drawings, studies, research, context models.</td>
<td>8</td>
</tr>
<tr>
<td>5 General news</td>
<td>Local news about architectural about events, workshops.</td>
<td>2</td>
</tr>
<tr>
<td>6 Class activity outcomes</td>
<td>Sharing group work, information, working progress digital files, group photos.</td>
<td>12</td>
</tr>
<tr>
<td>7 Student-to-student communication</td>
<td>Asking questions to one another, requesting things from one another.</td>
<td>7</td>
</tr>
<tr>
<td>8 Peer-to-peer learning</td>
<td>Sharing information and books. Students previously enrolled in the studio (i.e. senior students) assisting currently enrolled ones.</td>
<td>3</td>
</tr>
<tr>
<td>9 Tutor-student social interactions</td>
<td>Congratulations, greetings, encouragement.</td>
<td>4</td>
</tr>
<tr>
<td>10 Student-tutor enquiries</td>
<td>Inquiries to tutor about submission times, format or content.</td>
<td>7</td>
</tr>
<tr>
<td>11 TA Assistance</td>
<td>Faculty comments and technical feedback.</td>
<td>5</td>
</tr>
<tr>
<td>12 Fun</td>
<td>Memes, comic posts and/or videos.</td>
<td>2</td>
</tr>
<tr>
<td>13 Tutorials</td>
<td>Tutorials either found online, or as recorded in studio.</td>
<td>2</td>
</tr>
<tr>
<td>14 Architectural Info</td>
<td>Architectural ideas in general, talks, useful readings, quotes.</td>
<td>3</td>
</tr>
<tr>
<td>15 General University announcements</td>
<td>Announcing University (AASTMT) vacations and registration info.</td>
<td>3</td>
</tr>
<tr>
<td>16 Final Project</td>
<td>Images of final project panels or models from previous semesters.</td>
<td>18</td>
</tr>
</tbody>
</table>

In the subsequent narrative, we provide a summary of the categories that were most frequently used throughout the study period to explain what these consist of, how they were used and who used them. The post category that accumulated the largest number of posts is the ‘final project’ category; as it
was mandatory that each student posts images of their final project posters and 3D shots of their design in context at the end of the semester. This mandatory requirement meant that this category consists of posts created exclusively by students. On the other hand, posts created in the remaining 15 categories were created voluntarily, either by students, the instructor, or teaching assistants.

‘Class activity outcomes’ was the second category of posts that was most used, with students and faculty members using it to similar extents. Students used this category of posts to share individual or collective outcomes of the studio, including sharing files or coordinating group work\(^1\). Faculty members mainly used this category to encourage students during the design process, or celebrate outcomes of each design stage, along with images of design outcomes.

This is followed by ‘tutor instructions’ and ‘tutor announcements,’ which were exclusively used by the instructor and the teaching assistants, as means of communicating important announcements or instructions for the upcoming classes and/or submissions. ‘Design precedents’ and ‘presentation precedents’ were also exclusively used by faculty members, mainly to share images of precedent projects or their drawings in correspondence to certain submissions through the study period. ‘Presentation precedents’ were mainly used to expose students to the required quality of presentation of drawings, researches, models, and/or any other deliverable required in class. ‘Student-to-student communication’ and ‘student-tutor enquiries’ followed in terms of percentage of use, and were exclusively used by students to communicate with one another, with the class instructor or teaching assistants.

4.2 Student preferences (survey results)

Having identified an initial list of categories (table 3), a field survey was conducted to validate this list and to gauge a better understanding of it from the students’ point of view, and to facilitate the organization of the 16 categories extracted (table 3) into a broader categorization. Open-ended questionnaires were conducted with 54 students to determine their preferences.

When students were asked about "the one post or thread that they particularly found useful," ‘presentation precedents’ and ‘design precedents’ categories were mentioned, with a slight majority in favour of the former. Posts that belonged to ‘general news’ were also cited by several students as useful. Several students also cited posts belonging to the ‘architectural information’ category shown in table 3, as beneficial posts as illustrated in the following quotations:

- “Videos describing the design process, and how designers manage to draw inspiration for their design solutions,”
- “Videos about architects and how they think”,
- “List of famous architects’ websites”
- “Posts related to names of architects.”

Collectively, posts belonging to ‘presentation precedents,’ ‘design precedents,’ ‘general news’ and ‘architectural information’ categories appeared to belong together to a broader category of posts as was pointed out by one of the students who mentioned posts belonging to all 4 of these categories as preferable in her questionnaire, and highlighted how the reason of such preference was that she was more interested in posts that shared knowledge and opened up ideas, “rather than posts of instructions.” That has led the authors to consider posts that detail raw and domain-specific knowledge contained in its content or attachments to belong to one group. This broad categorization of posts has been classified under the theme ‘Knowledge’ (Fig. 2).

Several students highlighted how ‘posts describing requirements for assignments were really useful” near submission times. Another students mentioned how faculty “announcements of and reminders of TA office hours were really helpful”. The same student also expressed how the “presentation tutorials helped towards the end of the course”. This revealed that ‘tutor instructions,’ ‘faculty announcements’ ‘TA assistance’ and ‘tutorials’ in which such post belonged also appeared the second most useful. These appear to belong to a higher categorisation of posts that aims at guiding and providing students with academic and technical support needed for each stage of the design process occurring within the physical design studio, and has thus classified under the theme ‘Guidance’ in Fig. 2.

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\(^{1}\) One of the studio requirements consisted of an extensive group work stage where the entire student cohort collaborated in building a large context model of their chosen project site.
Multiple students stated their preference for posts belonging to ‘class activity outcomes’ and ‘final project.’ One of the students mentioned that he found the “final panels of the previous years were extremely helpful both in the beginning and end of our year,” another expressed how she benefited from “samples of other students projects even if they were not A students” Such categories of posts appear to be useful due to them digitizing and archiving the outcomes of the studio - including drawings, physical model, panels and/or research – in the form of images, videos, or files that are easily shared and accessed by all students using the group, both current and previous, and has therefore been themed as ‘Archiving’ in Fig. 2.

The final categories that were deemed useful according to students’ preferences are entitled ‘student-to-student communication,’ ‘student-tutor enquiries,’ ‘peer-to-peer learning,’ ‘tutor-student social interactions,’ ‘student-tutor enquiries’ and ‘fun.’ These categories appeared to be preferable due to their communicative and interactive nature that include important information not only in the content of the post itself but also the comments that were included in them when other users contributed, and has thus been classified under the theme of ‘Interaction in Fig. 2.

Figure 2. Proposed framework showing broad categories and sub-categories of Facebook group posts in this research based on research observation and thematic analysis of Facebook group content (section 4.1) coupled with survey analysis of students’ preferences (section 4.2).

5 CONCLUSIONS

It appears that the identified 16 categories of posts provide a comprehensive framework that was able to classify all 796 posts of the group, while providing a suitable lens to view all the different modes of communications that Facebook allowed the studio throughout the 8 academic semesters of the study.

It also appears that the 4 emergent broad categories collectively describe the type of support provided by the communication occurring on the Facebook group, namely: ‘Knowledge’, ‘Guidance’, ‘Interaction’, and ‘Archiving’. These 4 main functions of communication appear to play critical roles in supporting the students within their architectural design studio, which was reflected in their preferable posts.
The academic and technical knowledge dissipated through the post sub-categories of ‘design precedents’, ‘presentation precedents’, ‘general news’, and ‘architectural information’ appear to allow faculty members to use the Facebook group to communicate to their students design ideas and precedents that are needed to increase their exposure and enhance their design abilities [1,8].

The continuous guidance and faculty support provided by the post sub-categories of ‘faculty instructions’, ‘faculty announcements’, ‘general university announcements’, and ‘TA Assistance’ appear to expand and maintain the continuous dialogue and discussions required between teacher and student required within the Ecole des Beaux-Arts atelier model [1,3,7], while helping in the resolution of the usually limited time constraints of design studio hours [10].

The social interaction supported by the post sub-categories ‘student-to-student communication’, ‘peer-to-peer learning’, ‘tutor-student social interactions’, ‘student-tutor enquiries’, and ‘fun’, enhances the collaboration and communication between tutor-student and peer-to-peer, allowing the usually needed continuous process of input by others [3], while elevating some of the emotional stress for students caused by the constant mechanisms of assessments and submission [9-10].

The sharing and digital archiving of current and old studio outcomes supported by ‘class activity outcomes’ and ‘final projects’ sub-categories of posts appear to have helped create a venue where the products and processes of previous students are stored for new coming students to engage and learn from, allowing larger number of students to witness experiences of not only their studios but those that have preceded them, hence effortlessly drawing them into a richer virtual learning community [4,13].

It appears that the identified 16 categories of sub-posts described a wide range of communication activities that are relevant to architectural design education, and that the 4 broad categories highlight how these post categories benefit and support the design studio in ways that seemed to resonate with its students. Together, the broad categories and sub-categories of Facebook group posts form the framework that appears to be the most detailed in all the literature reviewed. This framework is potentially beneficial not only for enhancing computer supported collaboration in architectural education, but also valuable for enhancing the use of social media in design pedagogy in general.

6 FUTURE WORK
The authors of this paper intend to further develop the proposed framework by coding the rest of the academic years within the group, while including other Facebook group used in support of design studios, both in Egypt and abroad. The authors also intend to extend their survey to understand how the categories manifest in different groups within and without design pedagogy.

It is also within the interest of the authors to investigate any correlations between academic performance and Facebook use, and to understand how the manifestation of the post sub-categories and their broader categories influence the performance of students within the physical studio.

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REFERENCES


