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# Preliminary Investigation on Architecture Students' Perceptions of Developing Hard and Soft Skills via Project-Based Learning

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ABSTRACT

*In ensuring competitiveness and employability, architectural graduates nowadays have been observed to acquire new skills to complement their conventional architectural trainings. The main purpose of this paper is to discuss the hard and soft skills acquired by the architectural students via the architectural design project requirements, which is also categorized as project-based learning. The study utilizes mixed-mode methods through questionnaire survey and in-depth interview. As this is a preliminary study, the number of respondents for the survey is 32, while for the in-depth interview, only eight students have participated. From the findings, it can be concluded that skills such as video presentation (hard skill), teamwork and communication skills (soft skill) are essential for architecture students undertaking project-based learning. The findings of this study will be used to benefit investigations in student's skill developments in project-based learning with larger number of respondents. It is hoped that the findings will be adopted into the architectural education field to better equip future graduate architects with skills which are necessary for the industry.*

*Keywords: Architecture student; hard skill; soft skill; project-based learning; architectural design studio*

ABSTRAK

*Dalam memastikan daya saing dan kebolehkerjaan, lulusan seni bina pada masa kini dilihat perlu mempunyai kemahiran baru untuk melengkapkan latihan seni bina mereka secara konvensional. Tujuan utama makalah ini adalah untuk membincangkan kemahiran teras dan insaniah yang diperoleh oleh pelajar seni bina melalui keperluan projek reka bentuk seni bina, yang juga dikategorikan sebagai pembelajaran berasaskan projek. Kajian ini menggunakan kaedah mod campuran melalui soal selidik dan temu bual secara mendalam. Oleh kerana ini adalah kajian awal, jumlah responden soal selidik adalah seramai 32 orang sahaja. Manakala untuk temu bual pula, hanya lapan orang pelajar telah mengambil bahagian. Daripada hasil kajian, dapat disimpulkan bahawa kemahiran seperti persembahan video (kemahiran teras), kerja berpasukan dan komunikasi (kemahiran insaniah) adalah sangat penting bagi pelajar seni bina yang menjalani pembelajaran berasaskan projek. Penemuan kajian ini dapat memberi manfaat kepada kajian pembentukan kemahiran pelajar dalam pembelajaran berasaskan projek dengan jumlah responden yang lebih besar. Diharapkan penemuan ini dapat diaplikasi dalam bidang pendidikan seni bina, bagi menghasilkan graduan arkitek yang dilengkapi dengan kemahiran yang diperlukan oleh pihak industri.*

*Kata kunci: Pelajar seni bina; kemahiran teras; kemahiran insaniah; pembelajaran berasaskan projek; studio reka bentuk seni bina*

## INTRODUCTION

Architectural education is the basis or initial step in producing architects. The architects' qualities and their works are reflected by the education that they have received (Ghonim & Ewada 2018). Architectural education requires a high level of creativity as it involves a design process, which provides better and innovative solutions to the current issues. However, in obtaining effective solutions, imagination and creativity only are insufficient as they must also be supported by knowledge related to the subject matter (Combrinck 2018). For example, in designing a building for elderly people, the architect must possess knowledge in the needs and behavior of elderly people, the building technology, the sustainability aspects, and many others. This knowledge is imparted to the architecture students via

formal architectural education. Nevertheless, the student's personal experience may also help in obtaining the required knowledge. Formal architectural education involves many pedagogy techniques such as discussion, presentation, seminar as well as academic trip and site visit. These techniques are mostly employed in the architectural design studio, which is the core subject in architectural education.

The architectural design studio is an architectural subject that employs project-based problems, and its pedagogy focuses on student-centered learning. Therefore, the architectural design studio is normally conducted by a studio master, and assisted by few studio instructors. Among the activities involved are desk-critic where it comprises one-to-one project critique, student presentations, as well as peer critique and evaluation (Board of Architects Malaysia 2013). In this subject, students are given a specified project, where they have to identify the issues related to the project, analyze them, and finally propose solutions to it. The solutions must provide improvement to the current issues, and they must also be creative and innovative. Therefore, the process of searching, developing, and presenting the solutions may help to develop creative thinking and many other skills for the students.

In the architectural design studio project, the students are normally provided with a project brief. The description of the project, the students' task, and the expected outcomes are outlined in the brief. These expected outcomes are normally mentioned as the project's submission requirements. The students' findings and the proposed solutions to the project are normally composed and presented via these submission requirements. The submission requirements could be in various formats. Nevertheless, the most common one is the visual graphic presentation that normally consists of architectural drawings, composed together in particular sizes of papers or boards. To produce the architectural drawings, the students must possess sufficient knowledge and understanding, whilst to present the drawings in graphic format, they must be able to produce and compose them using either hand-drawn or computer skills. Besides presenting graphically, the students normally are also required to conduct a verbal presentation in explaining the whole scheme. Hence, the whole process; starting from identifying the issues until completing and presenting the solutions; involves the inculcation of hard and soft skills which are very beneficial for the students.

## ISSUES AND CHALLENGES

As aforementioned, the architectural design studio is student-centered learning which employs project-based problems. Students have to identify the issues, analyze them and propose effective solutions. Therefore, in accomplishing the project, students have to engage various techniques and skills in data collection, data interpretation, data analysis and synthesis, presentation, and many more. In addition, they must also be able to consolidate various matters related to space, materials, structure, and building standards in the design development. This process, which is starting from identifying the issues until providing the solutions, requires the students to deal with many parties including the community, local authority, and industry players. Besides that, this process also involves individual and group works, where some of the works will be conducted in small groups, whilst others are executed in large groups. Therefore, besides earning all the hard skills, students must also possess good soft skills.

Hard skills involve technical knowledge, whilst soft skills encompass personal qualities and interpersonal skills (Sanyal 2013; Riyanti et al. 2016). Hence, soft skills complement the hard skills in preparing competent graduate architects. A study conducted by Hendarman and Tjakraatmadja (2012) also indicated that hard skills must be complemented by soft skills in producing knowledgeable, productive, and innovative workers. Setiani and Rasto (2016) also emphasized that soft skills are essential in ensuring a person's competitiveness in the working environment. Andrews and Higson (2008) had identified in general the soft skills required by the students to fulfill the employability requirement. Among the listed soft skills are professionalism, trustworthiness, accountability, effective written and verbal communication skills, high self-esteem, creativity, as well as self and time management skills.

Lacking soft skills has always become a major complaint by the employer towards the fresh graduates from high institutions. Among the soft skills lacked by the graduates are communication and team-working (Schulz 2008). Communication and team-working are two soft skills that are very essential in surviving the working environment, particularly in the building industry. Yalcin and Ulusoy (2015) had conducted a study to evaluate the architectural students' perception regarding the personal features needed to be successful architects. Among the qualities that were rated highest by the students were effective communication skills, creative thinking, group works preference, and high empathy.

The project involved in building industry is normally in large scale, which encompasses various parties and expertise. Hence, its nature of works requires people to communicate with others and there is also a division of tasks in completing one project. Having effective communication skills is among the vital attributes that need to be owned by architects, as it aids in the process of delivering their opinions, presenting their designs, and persuading others to accept their views (Yalcin & Ulusoy, 2015). In addition, the communication process among various parties and stakeholders in the building industry can also become more complicated in line with the complexity of the projects, the technology growth, and the management systems of the design information (Norouzi et al. 2015). Among the factors that shape a person's communication skills are language proficiency and body language (Schulz 2008). People tend to be more comfortable and confident talking and presenting in the language that they are proficient. Self-esteem is also portrayed in their body language when they

are communicating with others. Therefore, the students who master languages other than their mother-tongue language will demonstrate higher self-esteem, especially when communicating in international programs or events.

It is believed that this communication skill can be improved by starting with small talk (Schulz 2008). However, among the major hindrance towards this small talk is the person's personality such as introverted character, shyness, lack of confidence, and many others. Moreover, the communication skill is also related to the team-working skill. This is due to the nature of team-working where the team members have to communicate to each other in exchanging ideas and completing tasks. Having miscommunication among the team members can lead to failure in accomplishing tasks. The communication skill is not merely important for them to present their solutions or proposed design, but it is also essential to portray themselves in the professional performance such as building and maintaining the networking, understanding the colleagues' opinion, presenting the intricate architectural information to laymen in understandable methods and corresponding the appropriate communication mode to various situations' requirements (Palea et al. 2012).

Besides communication skill, possessing effective team-working skill is also essential for architects as they will be working with other professions such as engineers, surveyors, and contractors in completing the projects. Among the traits that are necessary for team-working are tolerance, empathy, integrity, responsibility, and many more. Therefore, the interesting question is whether the continuous training during the varsity years can change or improve the students' personalities, so that upon graduating, they possess good soft skills in communication and team-working.

The development of soft skills in students can be embedded in the learning of hard skills. This can be executed towards the pedagogy techniques such as via student presentations, evaluations, discussions, peer-critique sessions and group works. The students need to search the related information, and exploring the relevant techniques and methods in acquiring the hard skills. In doing so, they are also exposed to the necessary soft skills such as effective methods of dealing with other people from different backgrounds and in various situations, self and management skills, and many more. However, different students have different capabilities in acquiring and mastering all these hard and soft skills. Some students are fast learners, whilst some others require more time to learn new knowledge and skills.

There are five main clusters of soft skills which are communication skill, decision making and problem-solving skills, teamwork and collaboration skills, self-management and professionalism skills, as well as leadership, influence and persuasion skills (Duncan 2014). Under these five main clusters, there are many soft skills that are significant to be possessed by the students. The completion of architectural design studio projects involved most of these skills due to various tasks and requirements that need to be accomplished by the students.

The explanation above shows that hard and soft skills are mutually complementary to develop the architectural student's skills via the design project requirements. Thus the objective of this paper is to discuss the hard and soft skills acquired by the architectural students via the architectural design project requirements, particularly the video presentation. In this study, the video presentation refers to the demonstration of student's works in multimedia format. In addition, the students' perceptions of the video presentation requirements are also evaluated. The discussion and findings demonstrated in this paper are hoped to benefit the architectural education in preparing the future graduate architects that are well-equipped with both hard and soft skills that are necessary for the industry.

## ARCHITECTURAL DESIGN PROJECT REQUIREMENTS

The core subject in the architectural study is the design studio. This is similar all over the world, where the architectural design studio is a project-based learning. In this core subject, students are given a design project, wherein completing it, they have to identify the related issues, analyze them and propose the innovative solution for betterment. The presentation of the solution is normally in a graphic and verbal format, and supported by the 3D site and building models. Therefore, the common requirements for the design project are the presentation boards, as well as the site and building models. In the presentation boards, students have to compile all the issues, idea development, concept, and approach of the solutions, as well as the proposed solutions into graphic format. This graphic presentation is supported by building models and verbal presentations in delivering a more comprehensive explanation of the solutions.

Architectural education is a progressive and cumulative learning process in preparing the students to become architects. The complexity of the projects given to the students will be in a progressive approach, where during the first-year study, the project is more towards the introduction to architecture and development of creative mind in the students. The complexity of the projects develops gradually, in line with the increasing year of study. In the early year of study, the students are normally assigned with projects that involved single-space and single-function buildings. Meanwhile, the projects that comprise multi-spaces and multi-functions buildings will be given to the students in their upper year of studies. This is concurrent with the accumulation of architectural knowledge and skills of the students, where it starts with the fundamental one and continues with more comprehensive and complex knowledge and skills.

In this paper, detailed elaboration is given for the design project of Universiti Kebangsaan Malaysia (UKM)'s third-year architectural students. Third-year comprises two semesters where the first semester projects involve building up to three storeys with a floor area of approximately 1800

square meters (excluding the circulation and services areas). Meanwhile, the maximum number of storeys for the second-semester building project is five, with approximately 3600 square meters for floor area (excluding the circulation and services areas). The limitation numbers of storeys and floor areas imposed for the design projects are essential in controlling the scale of the projects.

For both semesters, the students are initially required to conduct precedent studies related to the given main project in identifying the relevant issues, experiencing the real condition and situation, as well as collecting related information. The precedent studies are usually indicated as sub-project 1. After conducting the precedent studies, students are introduced to the site where the project will be located. Upon knowing the site, the students have to execute site analysis to identify the potential, challenge and constraint imposed by the site for the proposed project. This site analysis work is categorized as sub-project 2. Then, the students have to propose solutions for the identified issues, challenge and constraint and optimize the potential, in which this is normally depicted in the proposed building and its surrounding. The proposed design solution is indicated as sub-project 3, where besides designing the building, students also have to propose the design for the building's interior. Sub-project 3 normally carries the highest weightage compared to sub-projects 1 and 2. Figure 1 shows the tasks usually involved in each sub-project.

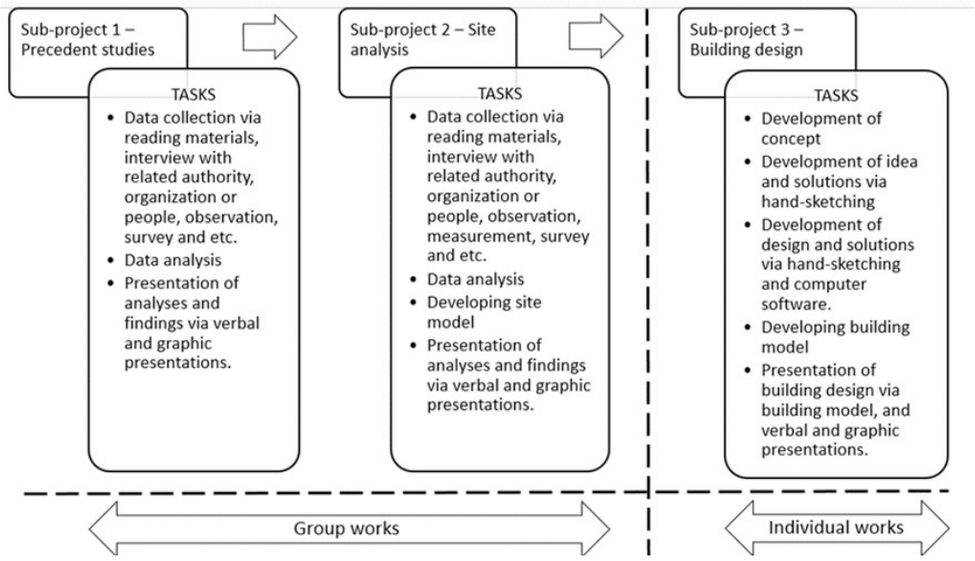
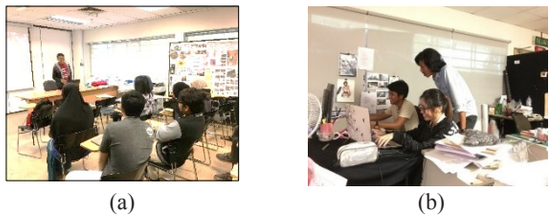



FIGURE 1. The tasks conducted by the students for each sub-project

All the information, findings and design solutions are presented in graphic format, which normally utilizes the presentation boards, and is supported by the site and building models. Besides the graphic presentation, students also have to conduct a verbal presentation to explain their works and design solutions. Hence, the general requirements for the project are the presentation boards, site model and building model, as shown in Figure 2. There are also additional requirements imposed for the UKM's third-year architectural students where they have to produce video presentations for sub-project 1, which is the precedent studies. The video-making process and presentation by the students are depicted in Figure 3. The purpose of imposing additional requirements is to provide the students with as many skills as possible in preparing them for the competitive work market nowadays. With these additional skills, it is hoped that the students will have better career opportunities and prospects. In general, the whole project requirements are depicted in Figure 4.

(a) (b) (c)

FIGURE 2. The examples of general project requirements produced by the students; (a) presentation board, (b) site model, and (c) building model



(a) (b)

FIGURE 3. The students conducted (a) group discussion for the video making, and (b) video presentation

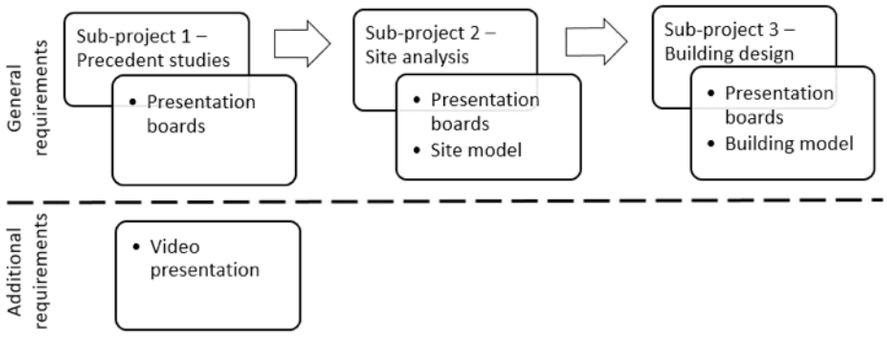



FIGURE 4. The requirements obliged to be fulfilled by the students for each sub-project

DEVELOPMENT OF HARD AND SOFT SKILLS

In general, there are five to six course outcomes that have been outlined for the Architectural Design course in UKM. These course outcomes are expected to be acquired by the students once they have completed the course and fulfilled all the requirements. Among the course outcomes are (these course outcomes are summarized for the entire three years of study): i) acknowledge the principles in design and architecture, ii) possess the hand sketching and model making skills, iii) identify, analyze and synthesize the related issues, data, and information, iv)propose design solutions that consolidate various aspects related to social, cultural and environmental issues, building construction and materials, and building regulations, v)produce and present the proposed design, which normally this is executed in a graphic and verbal format (Faculty of Engineering and Built Environment 2017). Though there is no specific computer skill mentioned in the course outcomes, it is still acquired by the students due to the presentation techniques that always follow the currently available technology and methods. The various presentation techniques and skills are derived by the students while fulfilling the course outcomes such as presenting the analyzed issues, data and information, as well as producing and presenting the proposed design.

The outlined course outcomes indicated that there are many hard and soft skills acquired by the students throughout the process of completing the Architectural Design course and the project requirements. Examples of hard skills acquired by the students are the techniques of sorting and analyzing the data, hand sketching, computer-aided drawings, graphic presentation, video making, and model making. These hard skills are necessary for preparing the students to become graduate architects. Nevertheless, there are also abundant soft skills attained by the students throughout the process of completing and presenting the project. This is in line with the efforts conducted by the Malaysian Government via its Ministry of Education which is actively promoting the cultivation of soft skills in students in preparing them for the work environment.

Hard skills are easy to be identified and quantified as they are often listed in the students' resumes. On the contrary, soft skills are subjective skills that are hardly to be detected and measured. This paper discusses more on the soft skills aspect, as they are also important in ensuring the survival of the graduate architects. The competency of graduate architects cannot be measured merely via their hard skills, but it must also be supported by good soft skills. The balance in both skills will make the students more competitive and employable for the work environment. The whole projects require the students to seek information regarding the socio-culture, human behavior, environmental aspect, technology, construction, and related regulations. To complete the project, they have to undertake many tasks that involve either individual or group works. Figures 5 and 6 depict the hard and soft skills attained by the students upon completing the project requirements.

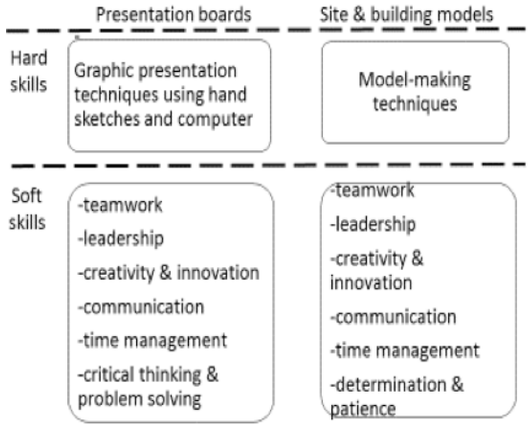



FIGURE 5. The hard and soft skills attained by the students for the general project requirements

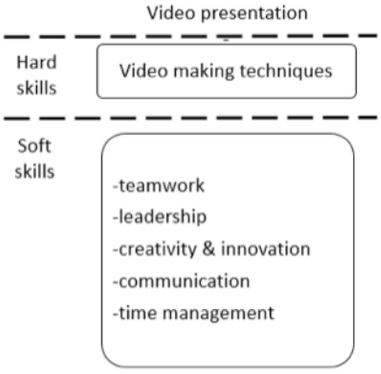



FIGURE 6. The hard and soft skills attained by the students for the additional project requirements

The video presentation task requires the students to compile and present the information that they have gathered for sub-project 1. Besides the video presentation, another requirement that they have to fulfill is the presentation boards. Therefore, the students have to manage properly the information that they will include in boards as well as in video presentations to avoid redundancy. As the task is conducted in a group, the students have to divide the work accordingly in ensuring full participation from all the group members. Hence, the video presentation task manages to develop the students' soft skills of teamwork, leadership, communication, and time management. Moreover, it also inculcates in them the creativity and innovation skills as besides the normal visual attraction required by the board presentation, the video presentation also involves the audio attraction. They have to be sensitive towards the selection of appropriate background music and many more that relates to audio. They also have to be creative and innovative in presenting the information within the limited duration given for the video presentation.

Therefore, the architectural design project requirements manage to inculcate many hard and soft skills in the students. Nevertheless, ‑architectural education is just the starting point where the students are introduced to these skills. In ensuring the effective effects to the students, all these acquired skills need to be developed and polished via lifelong learning. For example, video making techniques are the hard skill that needs to be developed continuously, in line with the emergence of many new technology and software from time to time. In addition, communication, teamwork, leadership, time management skills, as well as other soft skills are also important for the students in their future career, as they will be working with various people, situations, and projects.

## METHODOLOGIES TO STUDY THE STUDENTS' PERCEPTIONS

It is undeniable that the architectural design project requirements can inculcate many hard and soft skills in the students. Moreover, additional requirement such as video presentation may develop extra skills in the students, which also become bonus points when competing for a job in the industry. Though the video presentation provides many benefits to the students, their perception and acceptance of this requirement are still uncertain. Do the students notice the benefits of learning various techniques of video making? Do they feel the burden of completing this requirement?

To answer all these uncertainties, we had chosen mixed-mode methodology where the quantitative data involved a questionnaire survey, while the in-depth interview was used for qualitative data. The quantitative data determined the level of factors, and the qualitative data gained the in-depth answers that provided reasons for the factors mentioned by the respondents. Both data were analyzed concurrently before determining the results of the study. The final year students of the architectural design studio for Bachelor of Science in Architectural Studies at UKM had been chosen as a case study. The students were chosen because they had gone through the process of architectural education which consisted of progressive and cumulative learning processes. Therefore, the introduction of video presentation tasks was appropriate at this level since they were more matured compared to the lower years, and they were also ready for working in the industry.

The questionnaire survey forms were distributed to the third-year architectural students of UKM as a population. The number of students in the studio was 32, and we had selected all of them as the sample. The sample size is small as the total number of students per intake is not many. This is beacuse the department has to comply with the requirement of architectural accreditation where the number of students per intake should relate to the studio floor area offered. We had designed the questionnaire by using 4-Likert scales, namely very disagree, disagree, agree, and very agree. These Likert scales had been chosen as we wanted to avoid the students from selecting 'neutral'. In the questionnaire survey, the students were asked regarding three aspects, namely skills, knowledge and time consumption.

In terms of skills, the students were asked whether the video presentation task provides additional skills to them. Meanwhile, for the knowledge aspect, they have to rate whether this task provides additional knowledge that is necessary, related, and contributes to the accomplishment of the whole project. Moreover, they were also asked whether the process of completing this requirement consumes a lot of time that may affect the schedule of the whole project. The data from the questionnaire survey had been analyzed quantitatively in excel software, and presented as graphs and percentages.

Besides the questionnaire survey, the study also employed an in-depth interview with the same population as in the survey. Only 25% or 1/4 from the total number of respondents (32 students) were selected for the in-depth interview They were picked randomly, but still represented the various group of students such as the leaders, the members, the first-timer for video making, and those who were already familiar with the video making. The purpose of the interview was to obtain more detailed information for the data derived from the questionnaire survey. It was an in-depth, semi-structured interview. With the implementation of semi-structured interview, the respondents may elaborate further how their specific role and task in groups help them to develop their hard and soft skills, as well as sharing their experience and the current challenges in this video presentation task.

Their experience and exposure to the video presentation will affect their opinion on the time consumption of the task. It is parallel with Longhurst's (2009) point of view, that this method can examine various complexity of sentiments, behaviours, views, and also ranges of experiences. Though this method does not lead to a total solution, it provides some perspective of people's actions and thought. The semi-structured interview was opted instead of the structured and

non-structured interview as this method offers freedom to question and explore the answers given by the respondents. This will provide the opportunity to gain more elaboration and explanation from the respondents. Moreover, the language level and the sequence of questions can be modified throughout the interview to suit the understanding of the respondents (Piaw, 2012).

## RESULTS AND DISCUSSION ON THE STUDENTS' PERCEPTIONS

Figure 7 demonstrates that most of the students agreed that the video presentation task provided additional skills to them. The percentages of students that agreed and very agreed are 75% and 6%, respectively. This sum up to the total of 81% of students that perceived video presentation task inculcates extra beneficial skills in them. Meanwhile, the sum up percentage of students who disagreed and very disagreed is only 19%.

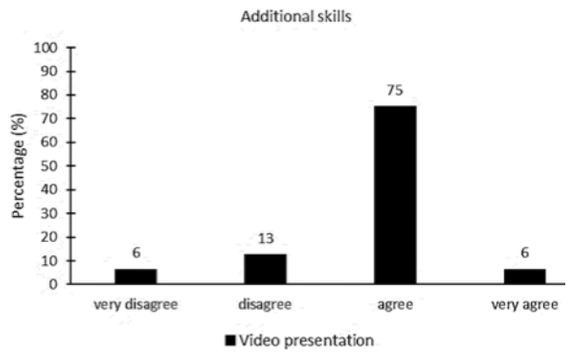



FIGURE 7. The Students' perceptions regarding the inculcation of additional skills by the video presentation task

The findings have been elaborated in detail via the in-depth interviews with the students, as shown in the quotations below.

*"I learn to develop my communication skill especially when I have to do a case study that involves international respondents. This video assignment makes me polish my English speaking skill and the skill of approaching others especially foreigners that have different cultures. I also learn how to connect effectively with people. Besides skills of communication and connecting with others, I also develop skills in group work. Previously, I liked to work alone. However, the assignment that requires me to work in group has provided the opportunity for me to improve my teamwork skill. I learn how to communicate with my groupmates and solve the problem together. We are also completing each other as we divide tasks and helping each other. My groupmates also teach me things that I do not know. Moreover, group work also helps me to improve my discipline and time management".* (Respondent 2)

*"Through this assignment, I improve a lot in teamwork skill. I learn how to tolerate others and accept each other's strengths and weaknesses. Besides that, I also improve my time management skill and self-discipline. As this is group work, we have to manage our time properly and know the priority in the tasks given".* (Respondent 5)

*"I improve my confidence level through this assignment. I learn how to communicate with people with various backgrounds, especially professionals. I am the leader of my group. I improve my leadership as I learn how to instruct my groupmates. Being a leader also helps to develop my communication and time management skills".* (Respondent 7)

The quotations above indicate that all the interviewees agreed on the benefits of the video presentation task in the inculcation and development of their hard and soft skills. This is also in correspondence to the results of the questionnaire survey (Figure 7). Table 1 shows that among the soft skills highlighted most by the interviewees were communication and teamworks skills. Besides that, they also elaborated that these two skills also contributed to the escalation of their self-confidence level. Moreover, as this task was conducted in a group, they also managed to develop their time management skill and self-discipline. In addition, for those who were leaders in the groups, they had the opportunity to polish their leadership skill via this task.

TABLE 1. Types of additional skills mentioned via interview

| Additional Skills | N=8 |
|---|---|
| 1. Skill of communication | 8 |
| 2. Skill of teamwork | 8 |
| 3. Escalation of self-confident level | 2 |
| 4. Skill of time management | 5 |
| 5. Skill of self-discipline | 5 |
| 6. Skill of leadership | 2 |
| Total | 30 |

Besides obtaining extra skills, most of the students also perceived that the execution of this task provided additional knowledge to them, as shown in Figure 8. They also agreed that the knowledge gained was beneficial and helpful for the accomplishment of the whole project. The video presentation had enabled them to understand more about the studied subjects and issues, as they had to do a lot of reading and field work to get the related information and data. Moreover, they also learned many techniques of the graphic and visual presentation via video making. Below are examples of quotations of in-depth interviews regarding the additional knowledge gained from this task.

*"In this video assignment, we have to do a case study for fashion academy. We have to shoot a video that consists of information related to fashion. This assignment provides me the opportunity to learn how the fashion show is conducted, and how they organize the weekly fashion show. Moreover, I also learn video editing techniques such as the method of including background music and many more".* (Respondent 2)

"*I used to make videos and tutorials for video making during my diploma study. Therefore, for this assignment, I just enhance my knowledge in video making by exploring new software. This assignment helps me to improve my skill and technique in video making*". (Respondent 4)


FIGURE 8. The students' perceptions regarding the provision of additional knowledge by the video presentation task

The interviews indicated that all the interviewees agreed on the contribution of the video assignment in providing additional knowledge to them. Table 2 shows that most interviewees mentioned additional knowledge of video making and editing, as well as latest techniques, technology, and software in video making. For the first-timers, they had the opportunity to gain basic knowledge in video making and editing. Meanwhile, for those who already had experience in video making and editing, this assignment enabled them to explore more, especially the latest techniques, technology and software. There is also an interviewee that elaborated on the opportunity to obtain knowledge regarding the fashion industry as the project was about the fashion design academy.

TABLE 2. The details of additional knowledge mentioned via the interview

| Additional Knowledge related to project | N=8 |
|---|---|
| 1. Gain basic knowledge in video making and editing | 4 |
| 2. Explore more on the latest techniques, technology & software | 4 |
| 3. Obtain knowledge of other fields; eg, fashion industry | 2 |
| Total | 10 |

Besides additional skills and knowledge, the students were also asked regarding the time consumption for the video assignment. Though the results in Figures 7 and 8 indicate on positive perception of the students towards this video-making assignment, the majority of them also admitted that the requirement consumed a lot of their time, as depicted in Figure 9. Nevertheless, some students disagreed that the task was time-consuming. The results of the questionnaire survey are further understood via the elaboration derived from the in-depth interviews, as shown in the quotation below.

*"The video assignment is not time-consuming because nowadays we have many resources to refer and learn such as YouTube channel. It depends on individuals whether they are willing to refer and learn"*. (Respondent 1)

*"For me, the assignment is time-consuming as I never do video editing. However, in completing the task, I learn the technique from the YouTube channel"*. (Respondent 2)

*"The time duration for the assignment is still reasonable as long as we know how to manage our time properly"*. (Respondent 6).

*"I think this assignment is still manageable if we divide the task accordingly in the group"*. (Respondent 8).

The interviews showed that the perception of the students regarding time consumption depends on many factors such as the previous experience and capabilities. Students who were first time involved in video making and editing would find that this task was time-consuming. Nevertheless, some first-timers opined that the time duration given for this task was reasonable and manageable, as nowadays they had many resources for references such as YouTube. This indicates that the capabilities of the students are varied. Some of them are fast learners and manage to acquire new knowledge, techniques, and skills faster than others.

On contrary, the students who already have experience in video making and editing opine that the time duration allocated for the assignment is manageable. However, their experience only is insufficient as the time consumption for the task also depends on the complexity of the video, as well as their familiarity to the software utilized for the video editing. With the emergence of new technology and software in video editing, they need to allocate some time to explore them. The elaboration derived from the interviews explains the results in Figure 9.

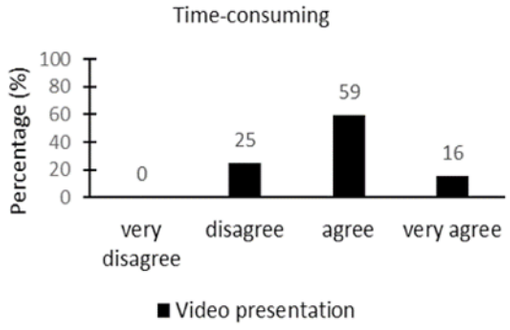



FIGURE 9. The students' perceptions regarding the time consumption of executing the video presentation task

The discussion above has supported the previous studies on the advantages of soft skills in contributing towards the development of personal qualities and interpersonal skills of the students, such as creativity, teamwork, as well as self and time management skills. These are the qualities needed by employers particularly in the building industry (Andrews & Higsion, 2008; Schulz, 2008). To conclude, it can be summarized that the students perceive that the video presentation task is beneficial to them in providing extra skills and knowledge. However, it is also time-consuming due to many factors.

## CONCLUSION

In summary, the architectural design project requirements are found to be able to inculcate many hard and soft skills for the students. The imposing of additional project requirements such as video presentation can provide additional skills and knowledge for the UKM's architectural students. The students have a positive perception towards the video presentation task, as they found that it is very beneficial to them. The majority of them agreed that video presentation provides additional skills and knowledge to them. Among the skills developed by the students are communication, teamwork, time management, and leadership. In addition, some of them also stated that the tasks executed during the video assignment manage to enhance their self-discipline and self-confidence level. Meanwhile, in terms of knowledge, the students agreed that the video assignment manages to provide new knowledge (for the first-timers) and polish their skills in video making and editing. Moreover, they are also exposed to the latest technology and software in video making, as well as having the opportunity to gain knowledge in other fields related to the project. Though the video assignment is beneficial, most of them also opined that the video assignment is time-consuming, considering that it is their first experience of producing video. The results of the questionnaire survey are in concurrence with the interview results. Nevertheless, the in-depth interview indicates that the students' perceptions of time consumption are subjective, as it depends on many factors such as their past experiences related to video making and editing, their time management skills, and their teamwork skills. Nevertheless, these additional skills and knowledge are very essential in preparing the students for the work environment, expanding the career opportunities and prospects, as well as elevating the employability of the UKM's future graduate architects. Moreover, the possession of many hard and soft skills will also elevate the students' confidence in facing the competitive work market.

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## DECLARATION OF COMPETING INTEREST

None

## REFERENCES

Andrews, J., & Higson, H. 2008. Graduate employability, 'soft skills' versus 'hard' business knowledge: A European study. *Higher Education in Europe* 33:411-422.

Board of Architects Malaysia. 2013. Manual of accreditation for architecture programme. Johor: Institute Sultan Iskandar of Urban Habitat and High-rise.

Combrinck, C. 2018. Socially responsive research-based design in an architecture studio. *Frontiers of Architectural Research* 7:211-234.

Duncan, A. 2014. List of soft skills and related terms. http://duncannuggets.com/2014/01/list-of-soft-skills.html [31 December 2017]

Faculty of Engineering and Built Environment. 2017. Undergraduate handbook – The Faculty of Engineering and Built Environment academic session 2017-2018. Selangor: Universiti Kebangsaan Malaysia.

Ghonim, M., & Ewada, N. 2018. Investigating elective courses in architectural education. *Frontiers of Architectural Research* 7:235-256.

Hendarmana, A. F., & Tjakraatmadja, J. H. 2012. Relationship among soft skills, hard skills, and innovativeness of knowledge workers in the knowledge economy era. *Procedia - Social and Behavioral Sciences* 52:35 – 44.

Longhurst, R. 2009. Interviews: In-depth, semi-structured. In *International Encyclopedia of Human Geography*, edited by R. Kitchin & N. Thrift. Elsevier Ltd.

Norouzi, N., Shabak, M., Embi, M. R. B., & Khan, T. H. 2015. The architect, the client and effective communication in architectural design practice. *Procedia - Social and Behavioral Sciences* 172:635 – 642.

Palea, A., Ciobanu, G., & Kilyeni, A. 2012. Educational skills in training landscape architecture students: Developing communication skills. *Procedia - Social and Behavioral Sciences* 46:4672 – 4677.

Piaw, C. Y. 2012. *Mastering research methods*. McGraw-Hill Education (Malaysia) Sdn. Bhd.

Riyanti, B. P. D., Sandroto, C. W. & Warmiyati D.W. M. T. 2016. Soft Skill competencies, hard skill competencies, and intention to become enterpreneur of vocational graduates. *International Research Journal of Business Studies* 9(2):119-132.

Sanyal, S. S. 2013. Improving soft skills of students to make them employable. *SIT Journal of Management* 3(2):419-428.

Schulz, B. 2008. The importance of soft skills: Education beyond academic knowledge. *Journal of Language and Communication.* 146–154. https://www.bcsgea.org.bd/wp-content/uploads/2019/11/The-Importance-of-Soft-Skills-Education-beyond-academic-knowledge.pdf [23 August 2021]

Setiani, F. & Rasto. 2016. Mengembangkan soft skill siswa melalui proses pembelajaran. *Jurnal Pendidikan Manajemen Perkantoran* 1(1): 160-166.

Yalcin, M. A., & Ulusoy, M. 2015. Personal and professional attitudes of architecture students. *Procedia - Social and Behavioral Sciences* 174:1820–1828.