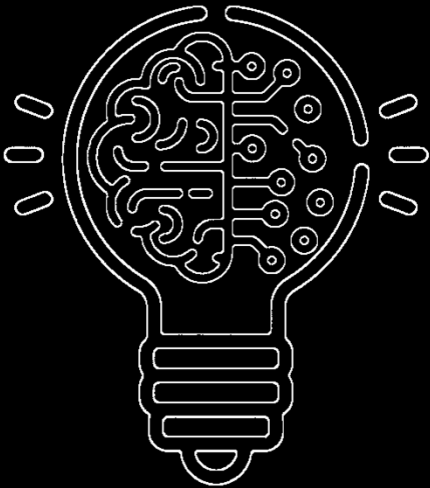


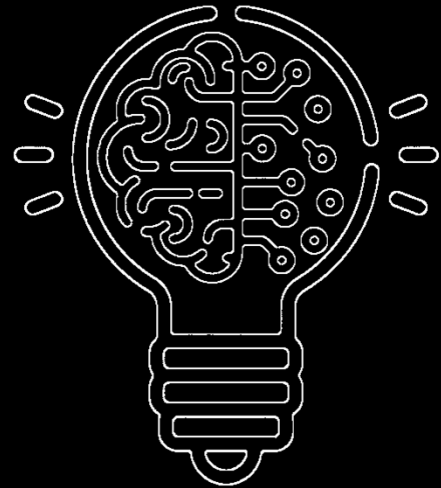
Talent Development and Research Hub

PRACTICAL PRACTICAL PRACTICAL AND THEORETICAL!

17th December 2021



*Thamer Almalki
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Presented to:

*Prof. Iyad Katib
Dean of the faculty of Computing and Information Technology
King Abdulaziz University*

Dear Prof. Iyad Katib:

Students in the faculty of computing and information technology do not have the opportunity to gain experience about conducting research or applying what they studied in a practical way. We would like to suggest for you to build a research and talent development program that will assist students in acquiring practical experience and allowing them to effectively implement their practical skills.

There are various successful programs like these at other institutions that can serve as models when designing our own, we only need to take the first step proposing the idea. With this proposal, we hope to achieve three main goals:

- Give students the opportunity to work alongside talented faculty members.
- Facilitate more progress on research projects and publications.
- Establish a supportive environment that nurtures students' talents.

Finally, we realize that you are busy so, we wanted to thank you in advance for your time spent reviewing our proposal.

Sincerely,



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Executive summery

Primary purpose

Although the faculty of computing and information technology is one of the most vibrant and technologically proficient in Saudi Arabia, it is missing one critical component a “Talent Development and Research Hub”. Due to the absence of this Hub, students are unable to engage in real-world or academic work related to their field; they are unable to collaborate on research with faculty or develop their abilities to their utmost potential due to a lack of opportunities.

Are students interested?

We surveyed FCIT students to ascertain their level of interest in research and talent development. Eighty-six students participated in our survey, and we found:

- Approximately (94%) approve of the hub’s establishment, and 81% express interest in joining.
- Approximately (84%) believe that a hub equivalent to this one is fundamental.
- Approximately (97%) believe that research can be a factor in producing new knowledge or deepening the understanding of topics in their field of study.

Short-term solution

We recommend you adopt the following short-term solutions promptly.

- Prepare faculty members to serve as effective mentors to students.
- Raising awareness of the high importance of practical opportunities.
- Establish the center by taking advantage of available possibilities such as competitions, challenges, and hackathons, and recruiting the best candidates, and mentoring them during the event.

Long-term solution

Establishing a Talent Development and Research Hub that is sole purpose is to support FCIT’s students.

The hub will be beneficial to three parties:

- Students.
- Faculty members.
- The Faculty of Computing and Information Technology.

Benefits

The FCIT undergraduate students lack research and talent development opportunities, so we are certain that these solutions would benefit students by enhancing their communication skills, helping them develop professional relationships with their mentors/teachers, and most importantly providing valuable work experience for them.

Introduction

We are a group of undergraduate students from the faculty of computing and information technology, and we would like to take this opportunity to propose a research and talent development program that could serve as a model for other faculties.

The word research defined as the creation of new knowledge and/or the use of existing knowledge in a new and creative way to generate new concepts, methodologies, and understandings.

Talent development is the application of targeted resources with the goal of supporting the growth of remarkable talents.

The fundamental issue is that we, as undergraduate students in the faculty of computing and information technology, do not have any opportunities for practical work outside of our graduation project.

This hub will have two primary goals:

- To conduct high-quality research that contributes to the body of knowledge in computing and information technology.
- To cultivate the talents of its students so that they can become leaders in their fields.

Reflection

We have created a survey on our fellow students' and doctors' opinions on whether they support the idea of having a hub solely dedicated to supporting FCIT's students or not.

(Students Survey) - (Doctors Survey)

Starting off, we have asked the students if they support the idea of having a hub that is solely dedicated to supporting the students. As you can see in Figure 2 & Figure 1, (93.7%) of the students we surveyed support the idea of establishing the center, and (81%) of the students expressed interest in being a part of it.

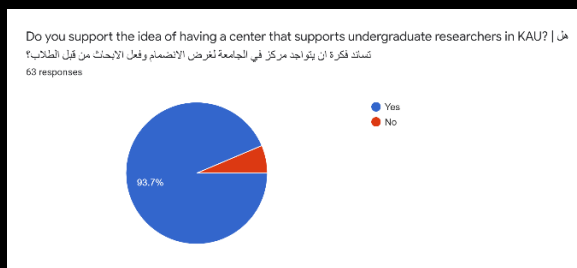


Figure 2

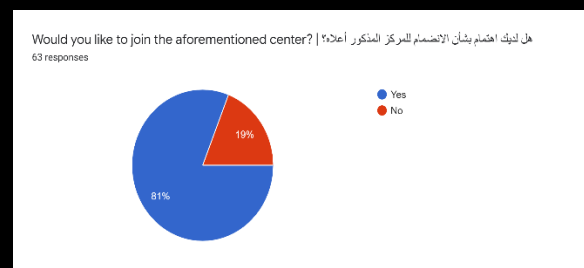


Figure 1

Further on, we have asked the doctors if they support the idea of having this hub, and whether they are willing to mentor the students or not. The nine faculty members we surveyed are more than happy to help, and as you can see in the survey, they unanimously agreed that having this hub is beneficial to students.

We have identified two key issues when it comes to supporting undergraduate students with their research & talent development at FCIT:

- Students have only one opportunity to demonstrate their potential and delve into the depths of their various majors, which is during their graduation project.
- Some students have no prior understanding of academic research.

Now that we have discovered the flaws, we can adopt solutions. To address the concerns, we offer the following solutions:

- Encourage students to participate in a variety of competitions, including local hackathons and programming contests. Although these solutions are already in place, most students are unaware of their existence.
- Enhance the understanding of academic research. This can be achieved by using a variety of approaches, including but not limited to elective courses on research methodology, seminars, and extracurricular activities.

Furthermore, we have a long-term plan to help FCIT's students. This plan consists of establishing a "Talent Development and Research Hub" that focuses on giving FCIT's students the practical opportunities and support they need.

Importance

In today's competitive job market, it is critical for students to gain as much work experience as possible. But unfortunately, working part-time jobs is difficult for most students. However, there are other opportunities for gaining work experience.

Experiences gained in the research and talent development center are experiences involve participating in practical applications of what students have learned while being assisted by a more experienced faculty member; They provide students an opportunity to explore their potential, challenge themselves, and build confidence. They also provide valuable work experience and help them deeply understand their respective fields. These experiences have emerged as a powerful approach for promoting student engagement and expanding student learning experiences.

Besides helping FCIT students, faculty members get a lot out of the experience of mentoring them. They get the opportunity to build relationships with potential leaders in our field, to experience teaching new skills, and to potentially accrue tenure points.

So, the center benefits both the students and the faculty members, but you might be wondering: How does it benefit FCIT?

The Research and Talent Development center improves FCIT's reputation, which could also lead to higher retention rates, increased funding from the university, and more publications. Additionally, it may increase FCIT students' chances of winning local and international competitions, resulting in increased notoriety, awards, and prize money.

Short-term solution

Prepare faculty members

To support the success of the Research and Talent Development Hub, we think faculty members must be trained to be excellent mentors to students. This can be accomplished by mandating faculty members to attend a course on mentoring students.

Raising awareness

We believe that FCIT should enhance the awareness of the high importance of practical opportunities. This can be accomplished through the distribution of flyers and the organizing of seminars discussing the benefits of practical opportunities.

Utilize available chances

Given that FCIT students participate actively in coding competitions and hackathons, we believe FCIT should fully support students by linking them with mentors who can assist them during the events. This may serve as the first step toward establishing the Research and Talent Development Hub.

Long-term solution



Figure 3

Administrative side

The University of King Abdulaziz currently has multiple research centers. The "Almobdioon Center for Studies and Research" and the "Research and Development Center" are just a few of the many research facilities that the University of King Abdulaziz now maintains. Despite their notoriety, these centers are exclusively limited to graduate students.

By integrating the functions of existing university centers and adding more to them, FCIT can create its own center, a research and talent development center.

FCIT's research and talent development center will have two core functions:

- Research and innovation support
- Talent development

The Talent Development and Research Hub will provide FCIT students with the necessary resources to conduct research and prosper their talents, including but not limited to, laboratories, equipment, software, funding, and mentors.

Hierarchy

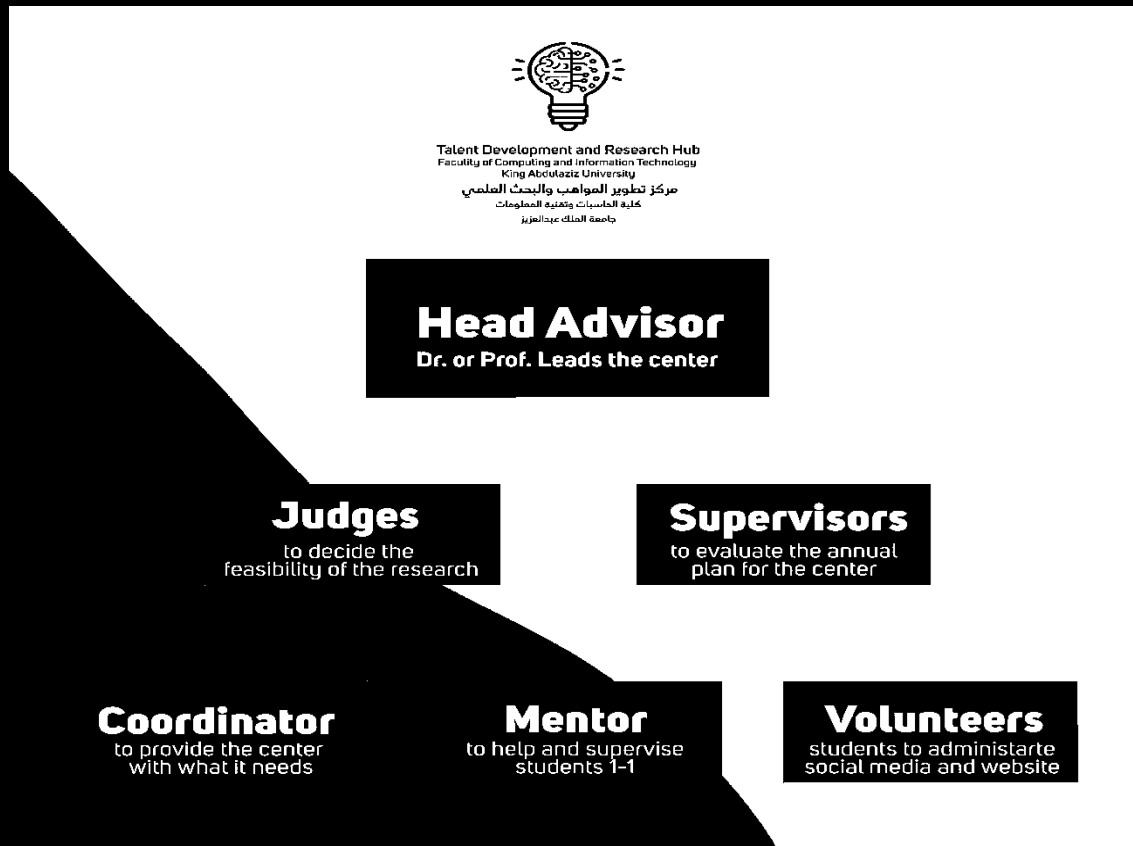


Figure 4

MOTTO

The Talent Development and Research Hub motto is "Innovation, Connection, and Support" which highlights the center's three pillars:

- Innovation: It should encourage students to better themselves by giving them opportunities to gain practical knowledge of their respective fields. That'll cause FCIT's students to think outside the box which will cause them to have an innovative mindset.
- Connection: It should give both the students and the faculty members the chance to connect and form professional relationships early in the students' careers.

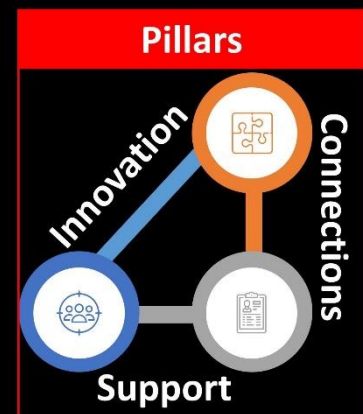


Figure 5

- Support: The center's main purpose is to support students through their endeavors, this can be achieved by providing the necessities they need which include but are not limited to; elective courses, lab access, connecting students with faculty members that can act as their mentors, and much more.

Talent Development and Research Hub



Figure 6

How it works

Since we're in the digital age, it's important to be tech-savvy. We live in a digital world with people constantly on their phones and tablets. If we want to get ahead, work smarter, and stay relevant; we need to know how to use technology to our advantage.

So, we believe that the best way to go about this is by making a website, such as the one shown in figure5.

This website consists of 3 main sections.

Research section

Students who want to assist faculty members in their research only need to go through the various research subjects that are displayed on the website and fill out an application form to join the faculty members in their efforts. The faculty member in charge of the research gets to decide whether to approve or reject the student's application based on their review of the form.

On the other hand, students who want to start their own research will need to submit a "research proposal" before they may begin their own projects. They'll be matched with faculty members who have expertise in their research topic's field if their proposal passes the vetting process.

Talent development section

A list of all the extracurricular activities and workshops available to students should be included in the talent development section. It should also provide a list of clubs that students might want to join to develop and nurture their talents.

Competitions section

A list of current ongoing and upcoming competitions should be included in the competitions section of the website. That section can also be used by students to connect with other students who are interested in competing in the same contests and form groups with them. Mentors will be assigned to these groups to assist students in preparing for the competitions.

Applicant's process

As previously stated, we feel the website should be divided into three primary sections: research, talent development, and competitions.

To participate in any of the activities, students must complete an application form like the one shown in Figure 7.

Because the application process varies slightly between the three sections, we'll divide the explanation into three parts:

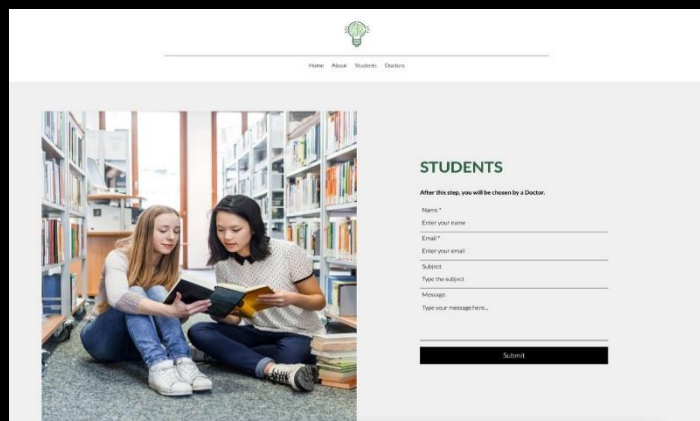
The image shows a web application form for students. At the top, there is a navigation bar with links for 'Home', 'About', 'Students', and 'Contact'. Below the navigation bar is a large image of two female students sitting on the floor in a library, looking at a book together. To the right of the image is the 'STUDENTS' form. The form has a title 'STUDENTS' and a subtitle 'After this step, you will be chosen by a Doctor.' Below the subtitle are input fields for 'Name *', 'Enter your name', 'Email *', 'Enter your email', 'Subject', 'Type the subject', 'Message', and 'Type your message here...'. At the bottom of the form is a 'Submit' button.

Figure 7

The research processes

a) Assisting faculty members in their research

Students interested in aiding faculty members with their research should first browse available research topics on a webpage like the one shown in Figure 8.

Once they've identified a research topic that interests them, they'll need to complete an application form and submit it using a webpage like the one shown in Figure 4.

The application form is vetted in the following manner:

After submitting the application form, it will be reviewed by the faculty member responsible for the research. They will approve the application if they believe the student is qualified to join them in their research; otherwise, they will reject it.

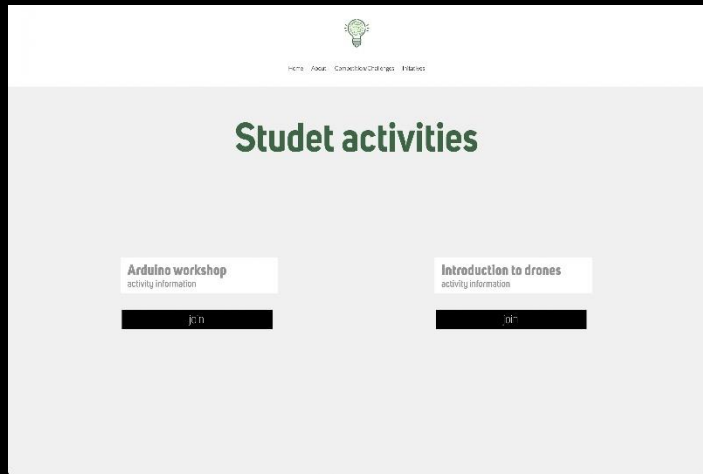


Figure 8

b) Starting your own research

Students interested in conducting their own research would need to complete a research proposal form like the one shown in Figure 7.

We believe that to avoid faculty funding being wasted, it is best to have a person or a team responsible for vetting students' research proposals.

The individuals responsible for reviewing students' research proposals should decide about whether to move to the next step based on two primary factors.

- Can it be done.
Will the student(s) be able to successfully complete their research with their current knowledge of the subject?
- Expertise
Is there someone with sufficient expertise who could serve as a mentor to the student(s)?

If the students do pass the vetting process, they proceed on to the next step. Students will be able to select any faculty member with knowledge in their research topic from a pool of available faculty members.

The talent development process

a) Clubs

Club leaders can use this section to upload pamphlets for their clubs. Students can join a club by browsing this section, selecting a club that interests them, then proceed on to apply by clicking on the “apply” button. Figure 7 depicts an example of what this section might look like.

b) Extracurricular activities & Workshops

As shown in Figure 8, this section should be utilized to promote extracurricular activities, workshops, and other events. Students should have access to a list of all current activities. Additionally, it should provide the precise dates and times of these activities. If these activities need students to register in advance, they should include a button that takes students to the registration page.

The competitions process

Students interested in partaking in competitions and/or hackathons may form teams by picking a competition/hackathon from the available list and then waiting for team positions to fill up. Once all positions are filled, they will be paired with a mentor. Figure 9 show possible layouts of this section.

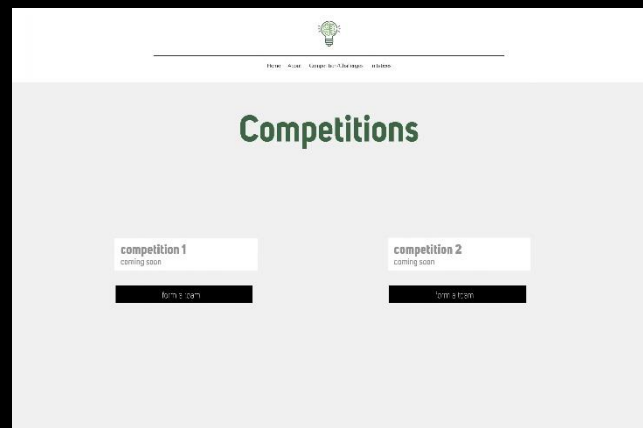


Figure 9

Conclusion

It has been proposed in this document that FCIT establish a Talent Development and Research Hub. It comprises everything we feel to be essential for FCIT students. Research and Talent Development at FCIT will help students succeed in a competitive job market that demands years of experience for someone to get employed, which is difficult for a new graduate to acquire. FCIT has always been a faculty for innovation, creativity, and technology; this Talent Development and Research Hub will only add to that.

We hope for our proposal to change FCIT for the better, and to also serve as a model for other faculties to incorporate. We want FCIT to set the standard, to inspire others to adhere to our ways.

Experience

We are FCIT students who have met similar adversity while pursuing our self-improvement goals.

Faisal and Mahmoud expressed an interest in research but were informed that they could not do it as undergraduate students. On the other hand, Thamer and Khalid were pursuing self-improvement through participation in competitions and opportunities open to FCIT students, but these opportunities were dispersed throughout what's App groups and were exceedingly difficult to find.

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Our posture



Figure 10