SpaT Geospatial Thinking
Campaign

Brief REPORT

October 8, 2019

Spatial Thinking (SpaT) Campaign

Spatial Thinking (Spat) Campaign is a program that has been instituted by AccuGeospatial, as part of its Corporate Social Responsibility. This program targets students in second-cycle institutions with the aim of equipping them with spatial thinking skills as well as create awareness for the use of geospatial tools and platforms. This can be achieved by teaching students to examine objects and their associated data, based on their location (coordinates) to ignite spatial thinking in them.Instructor-led SessionOn Tuesday 24th September 2019, a team of four from AccuGeospatial in their dedication to teaching Geographic Information System tools and application met 23 young students of Tema International School to train them on how the application of GIS would help them think Spatially and to inform critical thinking decisions based on location.

Twenty-three (23) Middle Year Programme (MYP) students of the Tema International School (TIS) were recipients of this interactive session. The mode of delivery of the sessions were a combination of PowerPoint slides and hands-on software demonstrations and field data collection. In all, three sessions of hands-on interactive trainings were held from September to October 2019.

For the purpose of the training, a 21-day ArcGIS Online trial license was set up for all the students. The focus of the training was to get them conversant with the ArcGIS Online platform and its bundled mobile and field apps. ArcGIS Online can be explained among others as an interactive display of geographic information that can be used to tell stories and answer questions.

Students being assisted to set - up AGOL Trial License

In addition, it is a collaborative web GIS platform that allows one to use, create, and share maps, scenes, apps, layers, analytics, and data. A user gets access to content in ArcGIS.

Living Atlas of the World, ArcGIS apps, and cloud infrastructure, where one can add items; publish web layers; and create maps, apps, and scenes. Thereby for the training session, the

students were taught how to import data in excel and shapefile formats onto AGOL map window, plotted and ranked both qualitative and quantitative datasets. Interactive Session Between Accu Staff and StudentsStudents being assisted to set - up AGOL Trial License The training continued Wednesday 25th September 2019, where the participants were introduced to configuring pop-ups, symbolizing datasets, save and share web maps.

The students studied that sharing maps on the web enables remote accessibility anywhere across smartphones and tablets. Each web map contains a reference basemap along with a set of additional data layers, plus tools that work on these layers. The tools studied by the students can do simple things

like open a pop-up window when you click on the map, or more complex things, like perform a spatial analysis. Finally, we taught them how to create web applications with the Web App Builder for ArcGIS. This opportunity enabled the students to understand Web App Builder for ArcGIS as an intuitive application that allows them to build 2D web apps without writing a single line of code. The application also includes powerful tools to configure fully featured HTML apps.

Therefore, the students learnt how to add map and tools, see them in the app and use them right away.

On Monday, 7th October, the third and final session was held at Tema International School, where students were first introduced to how to import prepared data schema onto ArcGIS Online (AGOL) and creating web map out of it. The schema contained layers such as poles, classroom blocks, administration block, swimming pool, walkways and football pitch. these layers assisted in the campus mapping exercise that was undertaken by the students.

Knowledge derived from the training will change the outlook of school projects since they discovered how easy it is to make and share beautiful, interactive web maps and apps using ArcGIS Online, a complete, cloud-based mapping platform.

Collecting data using Collector for ArcGIS
AccuGeospatial, SpaT Campain 2019

From presentations and reports to stories and field work, maps make everything better. Collector for ArcGIS was used for the data collection. The students therefore understood Collector for ArcGIS as a mobile data collection app which makes it easy to capture accurate data. The students used the web maps on mobile devices to capture and edit data. Collector for ArcGIS was used for the training because it works even when disconnected from the Internet and integrates seamlessly into ArcGIS Online.

Collecting data using collector for ArcGIS

At the end of the session, students were able to map and attached pictures of the features they mapped. Data collated during the field data collection was then used in the creation of an interactive Campus web maps and a campus app.

The training session highlighted on the key tools in the creation of interactive maps on ArcGIS Online. These tools are powerful decision-making tools for any business or industry since it allows the analysis of environmental, demographic, and topographic data. Data intelligence compiled from GIS applications help companies and various industries, and enable consumers make informed decisions.

In conclusion, the three day sessions of hands-on practical tution on geospatial tools and platforms sparked the interest of majority of students who intend requested the team to help institute a GIS club and a lab to assist spatial thinking education in the school (TIS). In addition, the MYP 5 Geography teacher, Dr. Michael Odame also requested the team to assist the school week by week in training the entire Geography students. With this requests and students interest in making Geographic Information Systems a part of their career, we recommend Esri's support in equiping these young students to improve their spatial thinking skills.

Our profound gratitude goes to the principal of the school (TIS) Dr. Ken Darvall, for allowing us interact with the students and to Dr. Michael Odame, for his immense assistance throughout the campaign, and to all The TIS SpaT Campaign project by AccuGeospatial has been an insightful experience for me. The enthusiasm with which the students accepted the campaign was

Reflection from Students and Teachers.

overwhelming. The lessons were restricted to our very limited Geography lessons. I was amazed with the speed with which our students grasped the skills needed for publishing and sharing their web-based maps. Geographic Information Systems forms part of the MYP Geography curriculum as we can no longer depend on the traditional topographical maps for the teaching of geographical skills. We will therefore appreciate if AccuGeospatial could support Tema International School to obtain a lifelong license for the use of ArcGIS. We will also be grateful if AccuGeospatial team could provide technical assistance to the school as we seek to incorporate GIS into the teaching and learning of the subject. May I take this opportunity to express our heartfelt appreciation to AccuGeospatial team: Richmond Kyei-Baffour, Evans Arthur, Stephen Afriyie, and Martinson Yirenkyi Smart, for their tireless effort in introducing our students to the use of digital mapping. We wish to express our profound gratitude to Mr. James Annan-Aggrey, the Managing Director of AccuGeospatial for his thoughtfulness in linking our school to the SpaT Campaign. We look forward to an intellectually fulfilling relationship with your team. We forever grateful to our principal, Dr Ken Darvall for granting us the permission for

the SpaT Campaign. the MYP5 students, we appreciate your time, humility and collaboration during the three sessions

Dr. Michael Odame
(Geography Teacher)

Overall, the SpaT training was an amazing experience for me, and I must say even though I was unfamiliar with some of the terminology used during the training, I paid close attention and grasped everything. I must commend AccuGeospatial team for a very interactive and audience appealing software. Now I can say that I know about digital maps and how to work them easily.

Adeline (Student)

During our Geography lessons we were taken through a GIS Spatial Thinking project. We made maps using layers of data from different countries in different years. In this project, I enhanced my thinking skills when we had to transfer all the map work skills they taught us to create our own maps to be published on a website. From the project, I am now familiar with the use of the ArcGIS Software.

Elorm (Student)

AccuGeospatial, SpaT Campain 2019

We were taught how to publish a web maps and manipulate layers of base maps for spatial analysis. We published the map we built and added some widgets that will help you leave bookmarks for remembrance. I published my own web map and I was able to send it to my friends.

The map was about megacities available during the years 1950s, 1960s, 1970s, 1980s, 1990s, 2000s, 2010s, 2020s and 2030s. On the map, you can click the symbols representing the cities to give you information about the various cities. Some information included the population of the city as of the year, the rank in respective to the amount of population and the country location of the city. I am now able to rank the cities according to their population or rank order.

When I am asked to build and publish the web map again, I will be able to do it with ease because I took time to listen to our instructor, Mr. Richmond Kyei-Baffour while he was giving instructions.

Richard (Student)

During the Spatial thinking project, I got the chance to use a web-application to represent spaces, which were big for example the world. Documents and tables can be added so you can use the information in the table to show features on the map in legends.

The approaches to learning (ATL) skills, which I used, were self-management, research and thinking. For self-management, I needed to take time after school to download, prepare and upload my data files into the application; I had to search online about some features in the app to know and this called for research skills. I had to think critically because some commands of the app were not straightforward and so I could not use the app easily.

I had to take my time to analyze the symbols and terms before I started to use the web app smoothly. I really appreciate the effort of the AccuGeospatial team for their patience whilst taking us through the lessons.

Richard (Student)