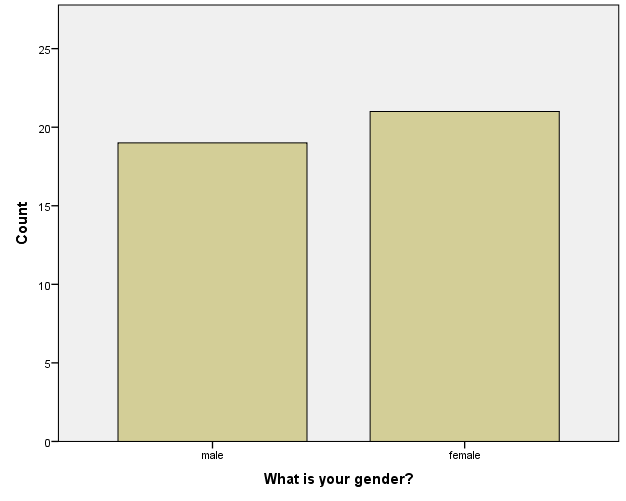
**Teachers’ Perception of Science, Technology, Engineering, Arts, and Mathematics** (**STEAM) Education**

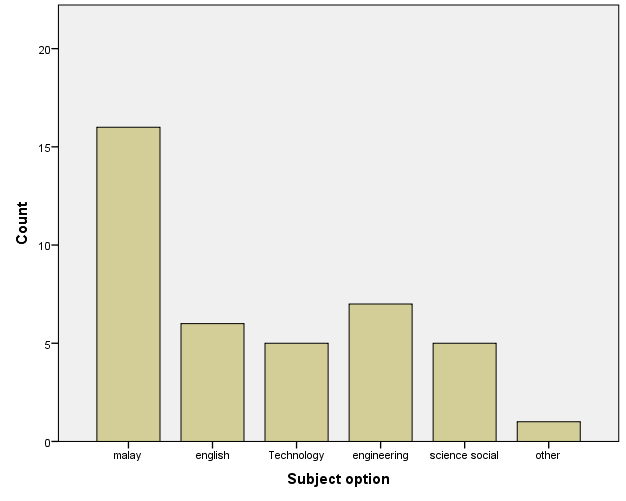
The research seeks to look into how teachers perceive STEAM education, the fragmentation of information relating to the topic is categorized into three; awareness, readiness and acceptance towards STEAM. Data set used was collected using a closed ended questionnaire administered to a sample of 40 respondents, mostly primary school teachers. The filled questionnaires were entered, coded and analyzed with the help of statistical package for social scientist (SPSS). The results were presented in tables and graphs.

**Demographics**



The distribution of the sample size based on gender was as show in the bar graph. Majority of the respondents were female representing 21(52.5%) from the sample of 40 used

**Subject option**



The demographics on subject option were distributed with majority opting for Malay as a subject option, followed by engineering, English, science social and others respectively.

**Awareness Towards STEAM Education**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **YES** | | **NO** | |
|  | **FREQUENCY** | **PERCENT** | **FREQUENCY** | **PERCENT** |
| Heard about STEAM Education | 22.00 | 55.00 | 18.00 | 45.00 |
| Read about STEAM Education | 29.00 | 72.50 | 11.00 | 27.50 |
| **Understand the STEAM Education** | **31.00** | **77.50** | **9.00** | **22.50** |
| Given a briefing about STEAM Education | 28.00 | 70.00 | 12.00 | 30.00 |
| Understand the STEAM Education objective and goals? | 26.00 | 65.00 | 14.00 | 35.00 |

The table shows the distribution of awareness based on five measurements; Heard of STEAM Education, Read of STEAM Education, Understand STEAM Education, given brief about STEAM and Understood STEAM objectives and goals. This measures clearly gives a high magnitude in terms of awareness based on the percentage in accordance to the sample sizes on the varied measurements. The measurement on Understanding the STEAM Education lead the group with 77.50%, followed closely by the measurement on the primary teachers who read about STEAM education at 72.50%. The rest of the measures also looks highly skewed on acceptance of being proudly aware on STEAM education.

**Readiness Towards STEAM Education**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Measure | Strongly agree | Agree | Disagree | strongly disagree |
| Influence STEAM Education in my teaching | 42.5 | 32.5 | 12.5 | 12.5 |
| **Enhance my knowledge by using STEAM** | 30.0 | 35.0 | 20.0 | 15.0 |
| Enhance my teaching pedagogy using STEAM Education. | 35.0 | 32.5 | 20.0 | 12.5 |
| consider the modules of STEAM Education as conceptualized and will develop my interest in teaching. | 42.5 | 32.5 | 12.5 | 12.5 |
| Enhance my teaching pedagogy using STEAM Education. | 35.0 | 32.5 | 20.0 | 12.5 |

The distribution towards readiness on STEAM education was distributed as in the table based on the linkert scale scores, majority of the higher percentages falls on the scales of extremes I.e strongly agree. As an example Influence of STEAM education in teachers teaching capacity experienced the highest score based on the score of the linkert scale with 42.5% strongly agreeing on the effect, similarly the same percentage considered the modules of STEAM education as conceptualized and will develop their interest in teaching.

**Teachers acceptance STEAM Education acceptance**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Strongly agree | Agree | Disagree | strongly disagree |
| Adapt my teaching to incorporate some of the techniques learnt in the STEAM Education | 45.0% | 30.0% | 15.0% | 10.0% |
| I am motivate to keep abreast of new technologies that I will use continually to enhance my teaching. | 35.0% | 30.0% | 27.5% | 7.5% |
| **Teachers’ would be enjoy using STEAM Education**. | 35.0% | 42.5% | 12.5% | 10.0% |
| Teachers’ would be easy teaching use STEAM Education | 37.5% | 40.0% | 20.0% | 2.5% |
| believe using STEAM Education increase the confidence to teach other subject | 20.0% | 37.5% | 37.5% | 7.5% |

The level of teachers’ acceptance to the STEAM education was measured based on the variables in this distribution table. As clearly attributed by the percentages a normality is seen as the linkert scale reduces from positivity to negativity, i.e strongly agreeing to strongly disagreeing. Moderate views are however seen in the believe that using STEAM Education increases the confidence to teach other subjects, with 37.5% disagreeing. The rest of the variables are skewed to describing a level of acceptance by the respondents.

**T-test**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **One-Sample Test** | | | | | | |
|  | Test Value = 0 | | | | | |
| t | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Have you ever heard about STEAM Education | 18.202 | 39 | .000 | 1.45000 | 1.2889 | 1.6111 |
| read about STEAM Education | 17.832 | 39 | .000 | 1.27500 | 1.1304 | 1.4196 |
| understand the STEAM Education | 18.320 | 39 | .000 | 1.22500 | 1.0897 | 1.3603 |
| given a briefing about STEAM Education | 17.716 | 39 | .000 | 1.30000 | 1.1516 | 1.4484 |
| Understand the STEAM Education objective and goals? | 17.676 | 39 | .000 | 1.35000 | 1.1955 | 1.5045 |

The variables describing the level of awareness of teachers towards STEAM education s per the t test showed a mean difference of 0. This entirely means that the variables have a no significant mean difference and hence the data set required a principal factor analysis consideration to role out on the unimportant variable. The t test value is significant because of the p values accorded to each of the variables representing awareness.

**ANOVA TABLE**

**Subject option versus awareness, acceptance and readiness**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ANOVA** | | | | | | |
|  | | Sum of Squares | df | Mean Square | F | Sig. |
| Enhance my knowledge by using STEAM | Between Groups | 3.629 | 5 | .726 | .637 | .673 |
| Within Groups | 38.771 | 34 | 1.140 |  |  |
| Total | 42.400 | 39 |  |  |  |
| Teachers’ would be enjoy using STEAM Education. | Between Groups | 5.009 | 5 | 1.002 | 1.137 | .360 |
| Within Groups | 29.966 | 34 | .881 |  |  |
| Total | 34.975 | 39 |  |  |  |
| understand the STEAM Education | Between Groups | .513 | 5 | .103 | .540 | .745 |
| Within Groups | 6.462 | 34 | .190 |  |  |
| Total | 6.975 | 39 |  |  |  |

Hypothesizing on the relationship one teacher takes on the level of awareness, level of acceptance and level of readiness on STEAM education, assumed by the variable on Understanding the STEAM Education, Teachers’ would be enjoy using STEAM Education and Enhance my knowledge by using STEAM yields an ANOVA output as above. The p values arrived at by the ANOVA table of 0.673, 0.360 and 0.745 are clearly statistically insignificant, being p>0.05. This hereby alludes for a rejection of the hypothesis and a conclusion therefore is a no relationship between whatever subject option a teacher takes and their level of acceptance, awareness and readiness. The variables representing the objectives have been considered based their high value descriptive accorded by the respondents.

**Conclusion**

Based on the three objectives of the research we can bring a conclusive being with the effect of the results that; Majority of the teachers are aware about STEAM education with the highest percentages responding with a ‘YES’ on ever hearing, reading about STEAM, understanding STEAM, ever being briefed on stem or understanding the objectives and goals of STEAM. This hereby asserts that primary teachers are aware of STEAM education, secondly majority of the primary school teachers proofed ready towards STEAM education with high percentages resulting to strong agreeing and agreeing being experienced. Lastly assimilation on teachers’ acceptance to STEAM education based on acceptance is moderately received by the teachers with moderate percentages attributing the variables describing acceptance being lower than with the other objectives.