Preparing design and technology students for the future research proposal

Technology, Development

Introduction

Preparation of the students for their future career roles is increasingly becoming an important role for the teachers and their counselors. Design and technology is a technical course that requires massive attention if the overall achievement in the student is to be enhanced (Paul, 2005). Hopefully, as a teacher and mentor, the highest inspiration will be to develop students that are full societal contributors coupled with providing the best learning opportunity that will enable them to live a productive life in design and technology career.

This article investigates the importance of design and technology course in preparing the student for their future career. The article presents an overview of the problem followed by the evaluation of the objective that is examined in the study. The background information provided in this article is in reference to the previous research work on career development in design and technology. Eventually the article provides a conclusion that is based on the findings of the analysis.

Problem statement

Career development is a long journey that requires constant encouragement and mentorship if success is to be achieved. However, the challenge level largely depends on the type of academic course enrolled by the student. While enrolling for a degree in design and technology, many teachers learn that it will be equally challenging to pass this knowledge to the future students who will highly be expecting to move up the ladder from their education to their career (Paul, 2005). These teachers are hence optimistic

that with the progress of their career, they will continually hone the skills developed in the few months spent in high school training.

Objectives

The main objective of this article is to investigate the best approach through which the design and technology student can be prepared for their later post-school options. In addition, investigates the skills, values, and attitudes essential in design and technology.

Skills, values, and qualities in design and technology

According to Fleischmann (2008), design and technology involves generation of ideas that can enhance providing solution thereby resulting into a product. Fleischmann (2008) adds that this may be a new product or a product requiring repair. In order to ensure that the skills are developed for repairing the products, Kemple (2004) explains the importance of the teachers providing the students with programs of design teaching. Through incorporating this knowledge, it hence becomes easy for the students to be enrolled in the desired skills. The skills requiring development are in relation to the process of design. From this perspective, Fleischmann (2008) insists on the skills of investigating, producing, designing and evaluating the products.

Kemple (2004) explains that the skills required by the students are first perceived to be the technical skills. These skills relate to the tools and materials that are required together with the accompanying procedures and processes. These skills are connected to the stage of producing. In addition,

Kemple (2004) explains the need for the students being associated with the process of designing. Basically, there are various skills that are registered as important. In relation to this issue, Kemple (2004) explains that the imperative design skills are connected to evaluation, designing and investigating.

Insisting on the importance of high school education as the foundation, Paul (2005) insists on the relevance of the lower secondary syllabuses to the spiritual, social and resource development for the community needs. In order for this to be achieved, the learning and teaching situations reflecting skills, spiritual values, skills and knowledge are integrated for the primary development. Through a relevant curriculum, Paul (2005) adds that the students are prepared for their living in a productive community through integration of the practical and academic education. This is one path for providing paid employment.

With the modern wave of unemployment, most of the school graduates are securing employment in informal working environment. Therefore, most of the students leaving the tenth (10th) grade are forced to seek opportunities that are available in informal environment. However, Eckes and Ochoa (2005) insist that this should not imply lack of preparation for the formal economy working environment. Therefore, the importance of academic and applied knowledge and skills is emphasized to all the students. Eckes and Ochoa hence insist on the importance of the students knowing how to adapt the knowledge and technology appropriately to their working environment.

According to Fleischmann (2008), design and technology is a field that enables the teachers to provide support to the learning of the students through ensuring constant encouragement based on real life contexts. Therefore, the knowledge and skills is related to the situations in real life. The community people are hence involved in learning activities through which they are able to teach their traditional knowledge and skills where applicable. In addition, Fleischmann notes that design and technology is mainly focused at ensuring that all the students are provided with the relevant and real life experience knowledge. On this issue, Fleischmann draws strong emphasis on the development of knowledge and practical skills through which the students are able to achieve and uphold a viable lifestyle after their years in school. Therefore, Fleischmann insists that this learning should ensure that the students are provided with the opportunities that will enable them to develop community connections. In addition, these students are able to draw from their linguistic, cultural and daily skills the knowledge and attitudes. This is coupled with ensuring application of these skills to the classroom learnt lessons. Additionally, Fleischmann insists on the importance of the students developing awareness and valuing the local and community knowledge coupled with realizing the importance of learning inside and outside the school context.

Enhancing employability

Fleischmann (2008) explains the school learned experiences as critical when it comes to encouraging the students to extend their learning beyond the school level. Therefore, Fleischmann emphasizes on the importance of the

curriculum being built on the basis of the knowledge already acquired by the students. A study by Kohler and Field (2003) established that in most cases, the students leaving the school look for opportunities through which they can be able to continually develop their education. In most cases, these students resume their education in order to ensure improvement of their already acquired qualifications.

Critically, Paul (20005) insists that the design and technology skills equip the students with the skills and expertise required in the design industry. However, Fleischmann (2008) insists on need for design education that adheres to a model of the curriculum which is applicable to the current requirement in the employment. Responding to the increase in design technology complexity, there are various attempts that aims at introducing teaching and interdisciplinary learning to the education on design. These attempts are however perceived to be sporadic coupled with having little enduring impact on the adjustment of design education to fit the ongoing design market dynamics. Therefore as a result of collaborative integration between the design education and employment industry, the curriculum relevance is ensured in the modern world that has been characterized with rapid transformations in the technological atmosphere (Fleischmann, 2008).

Analysis of the effects of design and technology on the future career

Fleischmann (2008) insists that early education enables the students to understand the opportunities in their design and technology career. Basically, many industries are challenging the educations institutions to

invest massively on education. Special emphasis is being drawn to the specialist colleges offering the technological courses. In most of these technological colleges, the investments have emphasized on CAM/CAD equipment therefore resulting in production of innovative and interesting work. However, the school of engineering continues to struggle as very few career opportunities are available. For such students, Fleischmann (2008) adds that the next decision has been to result in taking subjects that are reflective of the new work structure. Without providing the manufacturing industry clear support, design and technology is a department that the students have been encouraged to venture for their career development. Charged with the responsibility of enlightening the students on the programs and policies through which they can successfully be prepared for their post high school transitions, the overarching questions will first have to be comprehensively addressed. Therefore, McDonough (2004) explains that the first step will be to gain an insight of where to begin the intervention. For the interventions beginning at the senior academic years at high school, this may be a very late decision. This does not only apply to the students that have already dropped out but also to those that have hardly qualified in the required courses. By targeting an earlier beginning, it will be possible for the students to be engaged as they develop their career aspirations and post high school education supplemented by a suitable academic strategy (McDonough, 2004).

For a post- high school career development in design and technology, it will be important that the students excel in physics, chemistry, mathematics, English and social studies. This is the only trend that will ensure that these

students are able to remain on track for graduation at high school (Schneider, 2006). Schneider (2006) has also established that for the students that fail to secure an excellent performance in these ‘ gate keeper’ courses, completion of the whole coursework sequence may pose to be problematic therefore resulting to challenges as the student settles for the four years in the post educational courses in the higher education. Therefore, it will be important for these students to gain a clear understanding on the importance of excelling in these high school courses. In addition, sufficient access must be provided by the schools together with the required support through which these students will be able to excel these important courses. Design and technology is one of the challenging courses that require targeted or broad based approach. From the theoretical application to the practical work, which orients the students to the challenges that are to be encountered in the working environment, excellence is one thing that cannot easily be achieved without massive prior efforts. For instance, Kemple (2004) explains the need to uphold a proper balance in the school reforms reaching many students on whether the students should be prepared for the specific educational and career paths or be given the extreme flexibility to exploit the various options that may emerge in the early months of their post high school education.

As these decisions are being made by the students, Kemple (2004) insist that there are various factors that will have to be considered by the mentor who in this case happens to be the teacher. First, it is important to consider that through a special intervention, the post-secondary school outcomes are likely to be improved. This is apparently true according to an employment

outcome in a career academies study (Kemple, 2004). However, it may be useful if these students are served with varying abilities by these programs. Otherwise, the expectations from this program (which promises a lot of technological development) may be reduced to the teacher, and the students. As a result, these programs could be perceived as counteractive efforts and weaker. Secondly, it is important to consider the concentrated outreach that is required to overweigh preconceptions relating to the nature of particular subjects and the students that are served by these courses. For instance, considering the dual-credit programs operators through which the students are simultaneously granted the credit for high school and college, the outreach methods such as school fairs, counselor referrals and mailings could be used to draw attention to a high participants range.

Thirdly, as Paul (2005) explains, Design and Technology is a course that may not open full potentials for the students with disabilities. These students hence can be exposed to the information and resources through which they are guided to develop self-advocacy and decision making skills that will be required during the process of transition and after completion of the high school enrollment. Paul (2005) adds that as a result of ensuring that the academic courses are blended with the career-oriented courses, it will be possible for the students to avoid premature decisions in their careers. In addition, these students will be able to see the real-world application of the educational subject matter. It is important for the students to understand that as a result of ensuring that their curriculum is grounded on a specific career, the result will be a helpful instructional context and focus that does not need to be cast as a long-lasting choice. This is based on the fact that

with the rapid industrial transformation, which results to shift in the opportunity areas, the student will often be prompted to have their plans changed on frequent basis.

For an aspiring professional that wants to specialize in video gaming designing, Paul (2005) insists that completion of the high school curriculum is not optional. In this profession, the foundation courses at the high school level will be inclusive of Technology, Mathematics, Science and English if the student has to excel in a pursuing a career based on the technology (Paul, 2005). Therefore, the students will be required to incorporate strong analytical and communicational skills, which will be developed in these subjects coursework. In addition, the computer and technological courses will equip the students with the foundation for enrolling in the future education in related areas. Through incorporation of the art courses, the students will be taught the fundamentals of color and design among other areas that will be important for any career in design. With the languages, the individuals are able to develop the skills to be used, in both college enrolment and future profession.

In various high schools, the student will also be provided with the alternative of specializing in technical programs. In these technical high schools, the students are provided with the career concentrated curriculums through which they are trained in their interested areas. For the student expressing interest for game design career, it will hence be important to incorporate the knowledge on graphic design, information technology and computer science among other related courses in their field. In addition, these courses will be

inclusive of the elemental subjects that are essential to ensure acceptance in the college. In addition, the students are encouraged to be focused in specific field training. With the devotion on training and coursework, an integral component of experience in the high school will be enhanced. As a result of the student fully exploring this program, it will be easy to enhance eventual development of expertise required for a successful game designer (Kemple, 2004).

Conclusion

This article presents the various preparations that should begin at the high school level for an aspiring future professional in design and technology. Despite the fact that the future of design and technology still remains uncertain, it is apparent that this profession remains the favorite to many considering the favorable advantages in technological transformation. The future employability in design and technology also remains uncertain considering the number of industries that have collapsed in the recent past. However, technology still remains to offer the best opportunity in the modern world. As it has been established in this article, the best foundation obviously begins at the at the high school level. This is the level at which these young and determined students should be advised on the combination of subjects that will automatically qualify them for an enrolment in design and technology and eventual success in their future career.

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