Principles and Practices Report on Online Enrichment and Extension for the Gifted and Talented

LE RAPPORT SUR LES PRINCIPES ET LES EXERCICES DE L'ENRICHISSEMENT ET DE L'EXTENSION EN LIGNE POUR LES DOUES ET LES TALENTUEUX

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Abstract: Based on analysis of the individual characteristics and needs of gifted and talented students, this report gives a brief discussion of the attributes of online enrichment and extension to support quick learners. A conceptual framework for the structure and processes of good online enrichment and extension will also be explained.
Key words: attributes; online enrichment and extension; the gifted and talented

Résumé: Basé sur les analyses des caractères individuels et des besoins des étudiants doués et talentueux, ce rapport nous donne une discussion brève sur les attributs de l'enrichissement et de l'extension en ligne en tant qu'un support pour les débutants rapides. Le cadre conceptuel pour la structure et les processus de l'enrichissement et de l'extension en lighe sera également expliqué dans cet article .
Mots-Clés: attributs; enrishissement et extension en ligne; les doués et les talentueux

INTRODUCTION

In the 21st century, the rapid development of science and technology, particularly the innovation in Information Technology, is having a great impact on education. Technology is constantly used as a tool to enhance the effect of education, and quality-oriented education greatly depends on technology. As a branch of education, gifted and talented education with 108-year history (Joyce VanTassel-Baska, 1998:7) is faced with an unprecedented challenge. Researchers and educators (for example, Braggett, 1994; Tomlinson, 1995; Green, 1999) have been seeking the combination of technology and education, effective application of educational technology, and developing programs for the gifted and talented in response to their characteristics and needs. A current strategy which draws extensive attention and

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heated discussion is integrating technology into education, and online enrichment and extension becomes a good practice of achieving excellence in gifted and talented education. Based on analysis of the individual characteristics and needs of brilliant students, this report gives a brief discussion of the attributes of online enrichment and extension to support gifted students and 'have their needs met' (Tolan, 1996). A conceptual framework for the structure and processes of good online enrichment and extension will also be explained.

INDIVIDUAL CHARACTERISTICS AND NEEDS OF GIFTED AND TALENTED STUDENTS

To some extent, only when the identification of gifted and talented learners, along with their individual characteristics and needs, is clearly clarified can the mode and practice of such education be effective and significant. In fact, giftedness and talent are two different terms, or stages of brilliant students. As Gagné points out, giftedness means 'the possession and use of untrained and spontaneously expressed natural abilities' (Gagné, 2003:60), while talent indicates 'the superior mastery of systematically developed abilities (or skills) and knowledge' (Gagné, 2003:60). Gifted and talented education, therefore, is designed to take the 'non-normal' from one stage to another, or raise from a basic level to a high level. Gagné's Differentiated Model of Giftedness and Talent (Gagné, 2003:61) illustrates the development process of transforming giftedness into talent and factors influencing the process. Gifted students' outstanding natural abilities (or gifts) cannot be changed into the high-level skills (or talents) without a long process of learning and practice. During the process, subjective and objective factors like chance, intrapersonal, and environmental act as facilitators or inhibitors, influencing whether the transformation is successful or not.

The identification of gifted and talented students seems to be complicated because of diverse levels of giftedness, different stages, talent area and interests. It will often be handled 'through the use of more than one method (multiple criteria identification)' (Gross, Macleod, Drummond &Merrick, 2001). However, the recognition of the characteristics of a gifted student is a general way to select out the special students from their peers as well as an important stage in the identification process.

Giftedness can be indicated at two obvious levels: Giftedness in early Childhood and the highly gifted. To identify young gifted children, Joyce VanTassel-Baska concludes some of the major characteristics of giftedness reported by other researchers: attention; question frequency; advanced language; abstract thinking; memory; task motivation; persistence; social skills; curiosity; advanced humour; creative play; sensitivity to discrepancies (VanTassel-Baska, 1998:69). They fall into two categories: cognitive and affective characteristics of the gifted. Here I just take a few to discuss.

The gifted child is often absorbed by doing the thing he or she has interest in, displaying 'a high degree of concentration and an ability to focus on a problem for a considerable period of time' (VanTassel-Baska, 1998:180). In this case, the need gifted children want to get could be a more challenging problem or task for them to work out within a longer time. Long-term practice and attention in an area of interest is good for gifted children to cultivate and step towards the high level of giftedness.

Another cognitive characteristic of gifted children is abstract thinking, which distinguishes them from other children. Parents and teachers have noticed that children with gifted potential are usually skilled in manipulating language or numbers, exhibiting the ability to handle abstract ideas. What they need in their learning is to take integrated subjects and abstraction work at higher level.

Who are the highly gifted? Simply speaking, they refer to those whose advancement or achievement is extraordinarily beyond the common features of the gifted group. They may demonstrate developmental precocity early in life in such ways as early language development, asking complex questions, rapid learning ability, extensive vocabulary, unusual attention span, etc. (VanTassel-Baska, 1998:120). Though they have the same or similar characteristics as other gifted children, they may display earlier in the developmental succession or in high degree. They need to get more support from the family, school and society to meet their cognitive and affective characteristics.

Besides level of giftedness, individual characteristics and needs of gifted students can be discerned through talent area and interests. Gagné notes that systematically developed skills that the gifted may grasp include academics, arts, business, leisure, social action, sports and technology. The gifted and talented differentiate in these talented areas or fields due to individual characteristics they show. Some are specialized in language, science, etc. who are labelled 'academically talented'. Others are good at drama, music, etc. or have the ability to be skilled in sports. In terms of diverse characteristics, their learning needs may focus on 'differentiated learning practice with three catalysts 'chance, intrapersonal and environmental' (Gagné, 2003:61) so that the talented skills can be systematically built up. Moreover, the gifted and talented vary in interests, reflecting the characteristic of multiple interests. They often show a big variety of interests, ranging from one subject to another. If the work presented to them does little to engage their interest in learning, they may respond with negative attitude or behaviours. What they need is either 'opportunity to choose area(s) of interest in school work and go into greater depth within a chosen area' (VanTassel-Baska, 1998:187) or activities allowing for open exploration in a variety of areas.

So characteristics of gifted and talented students are diverse and developmental. Their needs matching with the characteristics are composed of psychosocial, academic and self-development counselling.

THE ATTRIBUTES OF GOOD ENRICHMENT AND EXTENSION

As one strategy for addressing needs of the gifted and talented, enrichment and extension are widely accepted and acknowledged to be the most appropriate way of providing for gifted students.

Though they are two different concepts, they are closely connected and mutually complemental. Enrichment emphasizes 'the broadening of content, understanding, processes and skills beyond the core curriculum and at a level appropriate to each child's development level' (Braggett, 1994:73), while extension 'concerns depth of studies and the ability of conceptualisation' (Braggett, 1994:73). Good enrichment and extension can promote the process of talent development and achieve excellence in gifted and talented education. Understanding the attributes of good enrichment and extension helps us know how to take advantage of this strategy.

Differentiation is one of the attributes, indicating the school offers a variety of learning options designed to meet the academic diversity of the students, especially the gifted and talented. Good enrichment and extension stress on differentiating instruction or opportunity to respond to the diverse needs of advanced learners. In good enrichment and extension activities, gifted children are given different ways to explore and deepen curriculum content, various sense-making processes to involve in, distinct experiences to develop and a variety of options to demonstrate or exhibit what they have achieved. They obtain not only different academic cognition, but the ability of higher order thinking. This attribute implies the importance of thinking skills for the gifted. Programs of enrichment and extension can provide concepts of higher levels of abstraction or greater complexity, and emphasise the development of higher order thinking skills. (Gross, Sleap & Pretorius, 1999) These skills comprise analysis, synthesis, and evaluation, which are utilised for regular content processing. Gifted students build up higher order thinking skills through inquiry, projects, papers, independent study or group work. The development of thinking skills of the gifted will go towards the stage of metacognition if enrichment and extension activities work in practice. As another attribute, metacognition reflects the process in which gifted students become aware of their own thinking processes and gain skill in thinking more effectively. Moreover, good enrichment and extension also contain the attributes of student centred learning and real world problems. The former means students are active explorers in the learning task or activity and teachers work as a guide or facilitator. Gifted students have more ownership of learning and space to gain knowledge and abilities, most importantly, owning independence in thought, planning, and evaluation. This attribute requires teachers to give them a room to explore their cognitive potential. The

latter focuses on learners investigate the kinds of questions and problems connected with 'real life'. Good enrichment and extension supply the gifted with real world problems to solve, which reinforces their ability of coping with problems in real life and develop systematic skills for future professions.

PREREQUISITE SKILLS OF INFORMATION LITERACY

A lot of practice in gifted and talented education show that integrating technology into education is a most dominate and effective way of excellence in current education. As proposed by Ann Barron and Gary Orwig (1995), some benefits of technology in education can be:

- Multisensory delivery
- Increased self-expression & active learning by students
- Motivation

(Barron & Orwig, 1995:4-5)

Obviously, not all technology should be applied into education, but those having relation with education are needed. The application of educational technologies brings about a new challenge for the learner. To enhance their learning and achieve their potentials, gifted children are supposed to learn and grasp information technologies or skills under the guidance of the teacher.

Learning technologies for educational purpose can be considered as information literacy. Today, huge amount of information is sent along electric cables. That is, information is mainly conveyed through Information Highway-Internet. What skills are required to sort out, judge and make use of the online information is a key issue in information literacy.

Online information Location

One of the skills concerned is how learners can locate the information they need. As Chamberlain (2000) notes that searching the web for information can be operated through different searching types, such as search engines, Meta Searchers, subject directories, library gateways and Specialized databases (Chamberlain, 2000). Each way has its own advantages and disadvantages, depending on what learners are looking for and what they use it for.

Evaluation

Almost everything can be found on the web, ranging from good things to bad ones. Skills for learners to evaluate web information are composed of 'reading web address, determining page authorship, checking the vital information, checking the content and assessing web page stability' (Chamberlain, 2000). The teacher can provide students a model of evaluation criteria, and students are also encouraged to work out their own strategies for evaluating information. However, in practice, some learners still open the junk mail or check silly sites because of curiosity or for other reasons.

Validation

To get real and useful information, students must be effective sorters, who have the skill of judging the validity of the information they have gathered or encountered in their later lives. One way to get validity is to question the information they see, which helps them check the source of the information. Another is to use 'cross-reference' to compare with other sources.

Interpretation

This skill is advisable for learners to determine which parts of the remaining information are important

and which parts are redundant after verifying the information. They must think how the information can support their learning, and how they can use such information to develop personal meaning. They must learn to create and communicate with information as interpretation of information and share new knowledge.

AN EXAMPLE OF ONLINE ENRICHMENT AND EXTENSION

In respond to the needs of gifted students, enrichment and extension activities or programs are designed and posted on the web, which is an effective way for students to explore actively information and knowledge and build up abilities. One of widely-used forms of online enrichment and extension are WebQuests, 'an inquiry-oriented activity in which some or all of the information that students interact with comes from the Internet' (Norton & Wiburg, 1998:181). Here I would like to take one example to explain as follows:

Ms. Sparague's WebQuest (Norton & Wiburg, 1998:184-188) is really a good example. It contains all the element of a WebQuest, integrating many educational goals into the program. The process of information using in her WebQuest exactly reflects SSCC and DEAPR (Norton & Wiburg, 1998). During the process, students can access to the websites listed in the WebQuest or other corresponding sites with their own exploration, searching for information associated with the topic, sorting and judging he information, designing, encoding and publishing their information-a tour prospectus for the Zerkonians. It also emphasises three domains of enrichment: content, process, and product. Students broaden and develop the content of planets in the solar system and obtain more knowledge of life from outer space through self-exploration. The process lets them be involved in group activities that each is responsible for part of the project, developing co-operative skills and responsibilities. By planning a tour for the Zerkonians, they train social skills because the activity is closely connected with 'real life'. At the end of the task, they give a presentation of their product, which develops a sense of achievement and build up self-esteem. Meanwhile, students are introduced to go beyond the core subject and provided chances of cross-discipline studies, a good practice of extension. Besides science, other subjects like mathematics, arts, tourism and literature are integrated into the activity. Another feature of the WebQuest is information skills are embedded in the context of subject area curriculum and classroom learning. To accomplish the task, students are supposed to employ the information skills: browsing the net, word-processing, editing, calculating, canning, using PowerPoint, etc. Other skills such as problem-solving and development of thinking can also be found in the WebQuest.

A CONCEPTUAL FRAMEWORK OF GOOD ONLINE ENRICHMENT AND EXTENSION

According to strategies proposed by Mrs. Williams, Mrs. Chase and Mrs. Sarague (Norton & Wiburg, 1998:167-190), a good online enrichment and extension generally include the following four components:

- Foundations
- Contents
- Tools
- Activities

They act as a whole to support learning opportunities for information users. Each is an integrated part of the group, interacting with the other in some aspect and recycling the process. Foundations are the basis for the cycle. Without it, other components cannot go any further. Only when the foundation is clearly set and arranged can the next step be followed. With the guide of foundations, contents come next, working as concrete or specific things for students to acquire. The content can influence the tools

students use to solve questions or problems. With the tools, students are conducted through sorts of activities aiming at achieving their potentials and learning goals. The effect of activities in turn gives feedback on foundations for improvement or revision. Then the recycle starts again.

Foundations

In the process of foundations, students have already learned basic knowledge or skills. The foundations can also be aims or purposes of information use or web-based learning set by the teacher or students themselves. The teacher may design a well-knit plan for them, provide them a model, or predetermine their information needs. Students can contribute to foundations too by making their own learning strategies or preparation.

Contents

This stage requires the teacher to provide a variety of learning options for individual learner to choose. The content is subject-oriented, based on a specific theme or topic. Students are encouraged to raise their own questions or problems on the content to solve in accordance with different cognitive abilities or interests.

Tools

The teacher should select all the possible tools or resources used to help students obtain information and promote individual or group leaning, including the Internet, encyclopedias, library, printouts, disks, and computer software. All the tools should be carefully related to specific activities.

Activities

In this stage, the teacher arranges activities relating to contents and meeting students' interests so as to engage students in acquisition of knowledge and mastery of comprehensive skills like problem-solving, high-order thinking and creativity. The activities can be designed in the format of individual, pairs or group work, helping students use information technologies effectively to broaden and deepen their studies.

CONCLUSION

In short, online enrichment and extension can be thought as a good strategy for educating the gifted and talented. Good practice with the strategy can challenge gifted and talented students, intensify their learning effect, and develop life-long skills.

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