SECTION FIVE

Public Education in Astronomy

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Public Education: the ultimatum for the profession

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1. Introduction

The impact of public education is without question in the 'public good' domain and hence there is really no need to justify the demand for it. However, some professionals and scientists remain unconvinced about the necessity for it. This paper will lay out the benefits it holds for the scientists, categorise the target groups and identify the methods of approach for each target group and finally outline some strategies that can be adopted to achieve the educational aims.

2. Benefits of public education for the professionals

Contrary to belief, the professionals have more to gain from public education than the public. There are several reasons for this.

The first of these is that public education calls attention to the scientist's work. The publicity generated through this will indirectly attract the attention of the relevant agencies or bodies that disburse grants, approve programmes or determine manpower requirements. In the light of budget cutbacks, downsizing demands and rationalisation exercises that are getting commonplace, the scientists will do well to create a public alertness to stave off these calamities. Public interest usually signifies a demand for the science or the field or the department and, therefore, the authorities might think twice before taking any negative action.

Secondly, it is obvious that through public education a scientist will be able to gain fame. This is not entirely without advantage – one day at a highway toll booth, the operator recognised me and waved me off. I saved 50c that day!

Thirdly, by getting involved in public education, the scientist gets a chance to reciprocate the tax payer's contribution to his science. This way he feels he is also making a contribution to society, a philosophical consideration that is increasingly getting important to many people.

3. The Professional's Apprehension About Public Education

But scientists and professionals continue to disparage and be apprehensive about the need for getting involved with the public. Why?

Firstly, professionals are generally suspicious of their colleagues who believe in public education because it is perceived as an attempt to get publicity. Any effort in this direction gains the jealousy, resentment and ridicule of others. This reaction usually stops him from getting actively involved. Of course this does not deter the genuinely interested person but it demands a bit more grit and perseverance.

It is also unfortunately true that professionals who have got involved in public education have sometimes had bad experiences. This refers to the situation where the education exercise is carried out through the media. Misquotations, deliberate or otherwise, misunderstanding of the subject and sometimes plain poor writing or reporting

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on the part of the journalist are sources of embarrassment and stress. Once bitten, the professionals shy away from all subsequent activities.

These problems are not insurmountable. Scientists and professionals in general can be made to understand the importance of public education after which they will be able to see that they should be encouraging their interested colleagues to do the battle for them rather than impeding them. The second conundrum can be overcome by training journalists in scientific journalism.

4. Categories of Target Groups

Target groups for public education can be divided into three main categorise: the mass media, sponsoring agencies and the public.

The mass media encompasses electronic and print and include television, magazines and newspapers. Sponsoring agencies is taken here to mean any organisation that promotes public education. They come in various forms: corporations, government agencies, universities, a board of Trustees etc. The last target group is the obvious cluster: the public themselves.

5. How to Make Contact

The approach one needs to achieve the goals of public education differs from group to group. A lot of innovative and artful methods can be utilised and in the end the approach one adopts will depend entirely on the educator. Broadly, we can identify the following peculiarities for each target group.

When we speak of the mass media, we talk about science journalists,most of them young and eager (at least they are in Malaysia), but not very experienced or learned. They want information and material fast and, most of all, they want these in easily readable and, if possible (alas), sensational form. To sustain their interest and assist them do their work we should try as much as possible to accommodate these requirements. In particular, they may want you to address the issue of how relevant your work is to man's needs. I think it is a good question, something all professionals should apply themselves to regularly. It is vital to note that these people are front-liners in the public education context and need to be nurtured (so that in the extreme they will not write rubbish) and cultivated to some extent (so that in the extreme they will not give you or your organisation bad publicity). It is important to make time for them because if you do not, it is very likely that they will get their information from somewhere else. As an example, I think research findings are best told by the researchers themselves and not by the Dean or the Head of Department.

Sponsoring agencies, like the mass media, make public education happen. Without them we will not have the funds or the means to carry out our educational programmes and hence their extreme importance. One significant aspect to note about sponsoring agencies is that some of the decisions they eventually make are often contingent on a few, or maybe even one individual, be they politicians, desk officers, secretaries, the chairman etc. How does one approach this and other problems?

To convince a sponsoring agency to support your public education programme, an interest must first be created through working papers and briefings which should be generously and beautifully illustrated. Remember the old adage: a picture speaks a thousand words. In my experience I find generally that selling the idea to a sponsor in the beginning a very formidable task. For instance, it took several years of hard work to convince the government that a planetarium for public education was essential and there

was a demand for it. But the good thing to note is that once you have sold the idea, subsequent overtures are easier and it becomes a relatively simple matter to maintain their attention. At the National Planetarium today, some corporate sponsors seek us out to fund activities rather than the other way round. The prerequisite for this to happen is to make that first event you organise for and with them a successful one. Hence the key word is success: If you succeed in one public event, the rest is easy.

The public is the last but certainly the most important target group I want to address. How do you make the public desire to be educated? Let us focus on two different things: one is what we want them to acquire the knowledge of, the other is what they want to learn.

We want to communicate the following: the beauty, joy and essence of astronomy; facts and features; man's pioneering spirit in space; astronomy's connection with the other sciences as well as religion, the arts and human culture; and much more. Which are all very well, but what does the public want? Most of them want to be entertained. Sure, some of them want their intellect stimulated, but, by and large in my experience, if the atmosphere we create is boring and ordinary, we lose them very quickly. Communicating science through entertainment is vital philosophy professional faces: A 'gee-whiz-bang' kind of production versus a technical or scientific presentation. Of course the way out is to take a middle road. Scientists must adapt language and style while at the same time not lose the integrity of the science to be presented.

I found a paper which listed the following attributes for a public educator: clear and pleasant speaking voice, ability to explain things clearly, ability to write well, scientific aptitude, mechanical aptitude (in the planetarium), enthusiasm, dedication, interest, creativity, imagination, flexibility and humility. If anyone here found someone like that, I will be delighted to meet him or her. That aside, it is important to understand that these traits in an educator are a cornerstone of public education and that we should translate them into actual features of the education programme.

6. Strategies for Implementation

The strategies we can muster depend on our objectives. I believe a public education programme should have the following goals:

(i) create and enhance public understanding of astronomy;
(ii) strike strategic alliances to allow fulfilment of the mission;
(iii) manage resources to preserve and expand the mission.

The following strategies can be adopted according to these goals:

Goal i)

- provide up-to-date information for public through the Internet, pamphlets, brochures, bulletin boards etc;
- organise seminars, exhibitions, observing session etc;
- encourage astronomy clubs, societies etc;
- provide formal learning programmes;
- provide training for journalists and teachers

Goal ii)

- make formal contacts with other organisations with similar interests for networking purposes;
- *develop joint public events with other organisations;*
- develop a marketing plan for sponsors

Goal iii)

- manage funds, human resources etc. efficiently;

- conduct a study to identify what resources are required;
- create a volunteer programme.

These are only some of the strategies that can be adopted. A lot more can be listed depending on the programme's needs and resources.

7. Final Remarks

In today's setting, public education is a requisite if scientists and professionals wish to continue their research and associated activities unimpeded. Accountability to the public takes many forms but the easiest and most enjoyable is taking your activities and research findings to them. Scientists or professionals in general are not accustomed to this kind of enterprise, which is in stark contrast to their day to day routine, but it can be done and it is easy to become a convert.

I would like to add that in a country where there is no astronomy in the curriculum, no observatories and maybe even no professional astronomers, the single most effective initiative to establish astronomy in that country is a public education programme. Through the programme you can reach children, parents, teachers, decision makers, politicians, managers ad infinitum. When you have them in your embrace you can then reach for the stars.