

## **Educating Before Birth via Talking to the Baby in the Womb: Prenatal Innovations**

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Education is the only major weapon that enables nations to progress socio-economically and gives a huge rise to their human development index. More so, it is considered to be the most fundamental requirement for poverty eradication, for addressing socio-political issues and for stabilizing peace and harmony among nations. Education is a lifelong process and does not have a preset parameter for its accessibility and provision (Sharkey, 1998). Learning is innate and natural and the human mind is set to learn since its conception. Additionally, in the recent era, investigations are focused on education and learning even before birth and extensive emphasis is now paid on experimenting on prenatal education by providing pre-birth interventions for babies inside the womb (Hepper, 1991; Kleindorfer & Robertson, 2013; Partanen, et al., 2013; Sharkey, 1998). This phenomenon, however, is relatively new and unknown to many countries like ours (Pakistan). Considering this, there is a need to reflect on the extent to which pre-birth interventions are required, relevant and beneficial within the context of Pakistan and whether these should be applied in our country. This discussion is set to provide a brief, reflective description on the significance of educating children before birth and proposes an innovative curriculum (see Appendix A) that may help the primary caretakers to ponder upon educating babies inside the womb. The

objective of this discussion is to highlight the fundamentals of prenatal education and raise awareness for the same.

It is speculated by scientists that when a baby is in the womb, he or she is able to hear and remember certain sounds and these sounds can be recollected by the baby even after birth (Alvarez-Buylla, Theelen, & Nottebohm, 1988; Dean et al., 2002; Robinson, Kleven, & Johnson, 2005). Researches done at the National Institute of Health regarding the effects of a mother's emotional condition during fetal development, when provided with stressful stimuli, have helped scientists study fetal reactions (Kawai, Morokuma, Tomonaga, Horimoto, & Tanaka, 2004; Mennella, Jagnow, & Beauchamp, 2001; Steinbock, 2011). Furthermore, studies which have increased awareness regarding fetal development are the source of many parental enrichment programs among expecting mothers (Blakemore & Frith, 2005; Chamberlain, 1988; Smotherman & Robinson, 1996). The purpose of these programs is to address the development of the baby in utero. This could be achieved through singing to them, reading, talking and other such activities which tend to stimulate the intellectual state of the baby from an early stage. Reading to babies in utero may have beneficial effects on the development of the fetus, regardless of the effects accounted for in parental enrichment programs.

The baby starts to hear the mother's voice by the end of the second trimester. Among the sounds of a pregnant mother's beating heart, breathing and blood coursing through veins, the baby is able to hear scuffled noise from the external environment as well (Anning & Edwards, 2006; Reissland, Francis, Mason, & Lincoln, 2011; Paul, 2010). Nonetheless, it would be irrational to think that listening to

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a particular kind of music would make the baby eventually become a great musician, but the baby will most likely recognize the music and respond to it after birth. Playing music to the baby also does not promise any effect on its intelligence, but it does provide a great way to soothe the mother and the fetus, indicating that enjoying music together could promote early bonding. A great response to playing music to the baby in the womb is that its heart rate may often increase, causing it to move more rapidly. Similarly, after birth, movement will also be stimulated when hearing the music the baby heard regularly during the mother's pregnancy.

Some cultures in the world are of the view that restricting certain actions and minimizing the mother's feelings to only those that would create a beneficial environment for the child is the best way to ensure a boost in fetal development. However, prenatal interventions not only evoke responses from the babe in the womb, these also help in maintaining the best of physical health. Moreover, there are other noises that the baby may have heard in the womb that he/she may recognize after birth; these could include the theme tune of shows the mother watched frequently during pregnancy or the words of a book read out loudly and regularly. There are more chances of a baby being soothed by the mother's voice rather than by any other voice, as it is the first voice a baby records. As a result of studying different literature on this phenomenon, it can be hypothesized that there are three ways through which a baby in the utero learns, though it is not certain that they adapt to all three ways of learning, a few may only adapt on a single way of learning:

## **Through experiences**

Babies perceive well known voices and music they heard in the womb, and feel alleviated when they hear these familiar sounds after birth. Babies in wombs are also soothed by the rocking motions of vehicles which may bring back memories of the movement of their mother's body.

## **Learning by repetition**

If a mother repeats certain conversations with the child when in womb, it would be more familiarized with the words and may respond immediately to them.

## **Learning by association**

The baby may associate certain things and words you say to the way that you feel while you said them. For example, if you are sad and are talking to your baby in the womb, post birth, those words would be associated with sadness as well. The association pattern would be similar for other emotions as well.

Considering these pre-birth initiatives and ideas, though there is no proof that caregivers can expand their babies' intellectual capacity by playing music or telling stories, there is a huge possibility that hearing voices may help the baby in the utero to build warmth and bonding with the primary caregiver and likewise the mother can also unwind and extend her own particular affections to the growing fetus. In some cultures, caregivers may not feel particularly comfortable with talking or singing to the expecting

mother's womb. However, the day to day conversations a mother/caregiver has and everything she experiences becomes associated with the fetus and helps its development. Such direct fetus prenatal engagement might also result in an enhanced mental wellbeing and self-efficacy towards pregnancy. To conclude, the baby in the utero is ultimately hearing all the noises from the environment and the hidden and subconscious learning might also be impacting their growth and development; as such, there is no harm in trialing this prenatal baby talk as learning is innate and does not have any age or boundary for its inception. The attached curriculum (see Appendix A) may facilitate the initiation by the caregivers who are interested to initiate prenatal baby talk.

### **Disclaimer**

This curriculum is developed as a part of self investigative interest and inspired by a video that was shown in the class whereby a story was narrated to the baby in the womb and an experiment (Pacifier) was conducted to see its later impact on the brain development. Since this is a soft curriculum that requires only interaction with the baby in the womb, it does not require any medical or clinical interventions with it and the subject does not have any potential threat until and unless some harsh and foul communication is carried out with the baby in the womb.

### **Caution**

This curriculum is a simple guide that expecting mothers and their families can implement on their own. As such, this does not require any professional help. However, a series of introductory

awareness sessions and a few sensitization sessions will benefit the implementation of the intervention.

## Appendix A

<b>Bhamani Curriculum - Talking to the Baby in the Womb: Version 1 (© Shelina Bhamani)</b>		
<b>Strategy:</b>		
<ul style="list-style-type: none"> <li>- Each session consisted of 30 mins to 1 hour of sensitization talk</li> <li>- For every session refreshments were brought</li> <li>- Refreshments were not served to the expecting mothers, but only to the family</li> <li>- A monthly 1000 rupees were given to the family as an incentive to participate in the research</li> </ul>		
<b>Week</b>	<b>Activities</b>	<b>Thematic Focus</b>
20 <sup>th</sup> Week	<ul style="list-style-type: none"> <li>- Explaining family importance of safe and healthy pregnancy</li> <li>- Interviewing the family members of their perception of 'Talking to the Baby in the Womb'.</li> <li>- Sharing the concept of Talking to the baby in the womb.</li> <li>- Seeking consent of the mother and family and making them aware of the time and communication obligations.</li> <li>- Filling the family demographic form</li> </ul>	<ul style="list-style-type: none"> <li>- Baseline</li> <li>- Family sensitization</li> <li>- Consent seeking</li> <li>- Building initial understanding</li> <li>- Couple Talk</li> <li>- Health Focus</li> </ul>
21 <sup>st</sup> Week		
22 <sup>nd</sup> Week	<ul style="list-style-type: none"> <li>- Showing the Fetus Week wise growth chart</li> <li>- Basic Pregnancy tips</li> <li>- Sensitization session 1: Baby can hear inside womb</li> <li>- Importance of smile in wellbeing</li> <li>- Importance of sleep in pregnancy</li> <li>- No harm to mother policy</li> <li>- No loud, harsh and foul exposure to the expecting mothers.</li> <li>- Impact of abuse and drugs on babies inside the womb</li> <li>- Sensitization Session 2: Baby in the womb can feel and hear.</li> </ul>	<ul style="list-style-type: none"> <li>- Womb Talk</li> <li>- Physical Body</li> </ul>
23 <sup>rd</sup> Week		
24 <sup>th</sup> Week	<ul style="list-style-type: none"> <li>- Session: Greeting Baby every morning, afternoon and night: Mother and All Family Members</li> <li>- Session: Reciting Religious Words to the Babies in the Womb</li> <li>- Combine Prayers/Azan/Ginans/Bhajans/Carols</li> </ul>	<ul style="list-style-type: none"> <li>- Greeting the Baby</li> <li>- Voice Focus</li> <li>- Religion Focus</li> <li>- Rhythms</li> <li>- Voice tones</li> </ul>
25 <sup>th</sup> Week		
26 <sup>th</sup> Week	<ul style="list-style-type: none"> <li>- Session on different kinds of poem</li> <li>- Special emphasis on traditional poems</li> <li>- Mothers should be asked to rhyme when they are alone, lying on the bed.</li> </ul>	<ul style="list-style-type: none"> <li>- Poems</li> <li>- Music</li> <li>- Rhymes</li> </ul>
27 <sup>th</sup> Week		
28 <sup>th</sup> Week	<ul style="list-style-type: none"> <li>- Session on storytelling: by keeping hands on the stomach and loudly reciting the story</li> <li>- Session on Dos and Donts of story telling</li> </ul>	<ul style="list-style-type: none"> <li>- Stories</li> </ul>
29 <sup>th</sup> Week		
30 <sup>th</sup> Week 36 <sup>th</sup> Week	<ul style="list-style-type: none"> <li>- Independent implementation by the mother and the family</li> <li>- Repeat: Greeting + Good Words + Poems + Religious Words + Stories (part of routine)</li> </ul>	Complete Integrated Fetus Talk
37 <sup>th</sup> Week	<ul style="list-style-type: none"> <li>- Asking mother what difference did she feel</li> <li>- Asking family about the difference they felt</li> </ul>	Endline Test

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