Notre Ciel: Bringing French Language Immersion to an American Planetarium

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BIOGRAPHY

Anna Green is the James S. McDonnell Planetarium Manager at the Saint Louis Science Center; where she began her career and has spent eight years engaging visitors in Space Science. She holds a B.A. in French with German and Music minors; K-12 Professional Educator License; and M.A. in Museum Studies.
ABSTRACT

In the spring of 2017, the James S. McDonnell Planetarium at the Saint Louis Science Center in Missouri presented its first ever live, interactive planetarium show completely in French, Notre Ciel. The importance of tying other academic subjects and real-life experiences into the subject being learned, in this case French, is important for relevancy, vocabulary growth, and showing that each discipline has a variety of applications. As informal education settings, planetariums have a unique opportunity to support students in STEaM and many additional subjects in ways that standard classrooms and pedagogical methods may not normally reach. The live French language planetarium show, presented for a group of first graders from a French language immersion school, has opened the door for the James S. McDonnell Planetarium in reaching out to a whole new audience: students learning a new language. This paper seeks to highlight what has worked and has not worked in bringing a world language under the dome and partnering with a new field trip group within schools.

Keywords: Astronomy, bilingual, English, world language, French, informal education, immersion, interactive, live, pedagogy, Second Language Acquisition
INTRODUCTION

Depending on where one lives in the world, it may not be common practice for a planetarium to present live shows in multiple languages. In the United States of America, live shows offered in multiple languages seem to be somewhat uncommon, excepting perhaps some of the planetariums in more major cities, such as Morrison Planetarium in San Francisco, California which offers live shows in four languages several times a year. One might also find an institution in a smaller town here and there with an offering in a world language as does the Chaffee Planetarium at the Grand Rapids Public Museum in Michigan with its live Spanish show; however this may not be as common. In most cases for planetaria within the USA, a show in a language other than English is often a canned production with a dubbed track in the needed language, as is the case with *The Little Star That Could* and *Dynamic Earth* in Spanish at the Bechtel National Planetarium at Columbia Basin College in Pasco, Washington, or *Big Bird’s Adventure: One World One Sky* in Spanish at the Adler in Chicago, Illinois. This is an unfortunate situation as the unique environment of the planetarium can lend itself well to teaching a world language, or helping visitors who may not be comfortable outside of their own language feel more comfortable. It is within the teaching of astronomy in a world language under the dome that meaningful language learning can occur for students – giving them the opportunity to explore multiple subjects at once and outside of a normal classroom environment. With a staff member capable of presenting a live planetarium show in French, the James S. McDonnell Planetarium at the Saint Louis Science Center in the United States has presented multiple bilingual French-English live shows, and took the leap in 2017 to present the first ever all live French show, *Notre Ciel*. This paper will look at how a planetarium can be beneficial to second language acquisition, welcome visitors who do not speak English as their primary language, and increase attendance through new group visits and partnerships.

A LANGUAGE BASED BACKGROUND

Perhaps this topic seems odd coming from a planetarian, so I would like to give some context as to my credentials. Today I am the Manager of the McDonnell Planetarium in Saint Louis, Missouri, but that was not where I started. My undergraduate studies were in French, German, and Vocal Performance. I also earned a K-12 professional educator’s license (PEL), with endorsements to teach French and German, which continues to remain valid. As part of the requirement for the PEL, I studied Primary Language Acquisition, and especially Second Language Acquisition (SLA) theory. My plan was to become a high school French teacher when I fell in love with volunteering at the McDonnell Planetarium. I started working in museums and began earning a Masters degree in Museum Studies to support my work at the Planetarium. I never went back to classroom teaching and eventually became a fulltime planetarian.

For a while I figured my undergraduate degree would just go mostly unused. Periodically, we might get a visitor or two who speaks French or German and I will converse with them in their native language, but otherwise my most used subject from my undergraduate studies was music due to working with the symphony in the planetarium. After a few years of working at the McDonnell Planetarium, I noticed that about once a year we seemed to have a group of French speaking students come to a show as part of a class trip abroad. Every year the teacher would speak with me and tell me that the teens did not really speak much English. I would invite them to shout out remarks in French during my show to interact if they were more comfortable but they usually stayed silent while the rest of the audience would answer my questions and pose their own in their native English. This got me wondering how to potentially not only get them more involved, but also how to bring in others who speak or are learning a world language.

WHY BRING A LANGUAGE BESIDES ENGLISH INTO THE DOME?

For students learning a world language, whether in an immersion school or in a class in a traditional school, the planetarium can provide a unique opportunity. One of the best ways to help second language (L2) acquisition is to provide meaningful input and allow the opportunity for interaction and output. According to Fred Genesee (2001) of McGill University, “Instruction for beginning language learners, in particular, should take into account their need for context-rich, meaningful environments” (para. 17). Meaningful input is language with communicative intent that is not a drill or activity specifically providing L2 learning instruction. Input is also considered in many language acquisition theories, to be the foundation for learning, comprehending and acquiring a language. By partnering with a teacher or school, a planetarium can provide meaningful input about astronomy in the L2 of the students, and in turn, provide the students an opportunity for output in a safe environment where they may not feel judged for speaking by other students. Bill VanPatten (2003) explains in *From Input to Output: A Teacher’s Guide to Second Language Acquisition*, that
it is important, however, to note that we are not talking about learners practicing a form of structure in their output; we are talking about learners coming to the awareness that they need a form or structure because of their output (p.69).

By asking questions and allowing the students to answer, it also provides the students the opportunity to create (hopefully meaningful) output as well, which in the end could lead to better processing of the input.

To provide the most meaningful experience for the students, the presenter should communicate with the teacher before the visit if at all possible. Students who are in the beginning stages of SLA process for meaning first and foremost, as intake processing abilities of a new language learner are limited. Intake can become a part of the linguistic system as it is what is held and processed in working memory. If there are other environmental factors drawing on the attention of the learner, however, it makes intake and processing for meaning far more difficult (VanPatten, 2003). By working with the teacher beforehand and providing suggestions for pre-visit activities, the teacher can prepare the students with vocabulary and at least some content in the classroom. This approach means students will have at least some knowledge of astronomy in the L2 so that when they hear the vocabulary and content in context, scaffolding (building upon previous instances of learning a concept) can occur and the students will be able to better process the input for meaning with less of a drain on processing resources from any other input (i.e. the stars on the dome).

A world language show is an opportunity to bring a new audience into the dome. For school based planetariums, this could be an easy fit. It gives world language instructors the opportunity to work with students in a different setting and create a fun and engaging way to teach the language, and they do not have to worry about travel costs as much as they would with a field trip outside of the school or school district. For both stand-alone planetaria and domes that are part of a museum campus, an opportunity lies within this concept. As travel is difficult for most schools, particularly if there are not multiple classes attending the trip to make the cost of bus transportation worthwhile, the potential for Science and World Language teachers to partner and bring more students is strong. Any partnerships formed could also lead to more partnerships within the same school and district as well. This is a chance for planetariums to build new partnerships with teachers too, which will hopefully increase attendance (and when applicable, revenue) and become a repeat visit every year.

There is also a benefit in regards to native speakers, as a show in their native language can make an institution feel more welcoming to them. It also enables these visitors to be better engaged and hopefully increase stay time. Furthermore, if one taps into the tourist industry in the area, it is possible to have a new group of visitors to bring in from traveling groups passing through the city. In the end this could lead to a new revenue source for the institution.

Finally, a planetarium show in a world language opens up cultural opportunities to explore with the audience. Students study their own culture, perhaps the history of other cultures within the last 500 years, and primarily that of ancient civilizations in the United States. If they are taking a world language or international studies class, they may also study current cultures of other countries. By having a world language planetarium show, students can also experience that a different culture may view science, specifically astronomy in a different way. This is the case, for example, while discussing the Big Dipper. Most American visitors who come to the planetarium are familiar with the Big Dipper, but are often unaware that other cultures call that asterism something else (i.e. the Great Plough in the U.K., la Casserole [the sauce pan] in France and der Großer Wagen [the large cart] in Germany). This lends itself to then discussing a new concept – not all star patterns are considered official constellations. This also allows for more stories from cultures other than the Greeks (which seem to be the most popular, particularly within the United States), leading to better engagement of the audience.

HOW SHOULD THE SHOW FLOW?

Once approval has been given to have a 100% live world language show (and/or a bilingual shows), decisions have to be made on how to arrange the show for the audience. Lightbown and Spada (2006) note that it is important to provide a content-based, natural setting rather than a language classroom instructional setting, and to keep in mind that that the focus of a lesson is… on the subject matter, such as history or [astronomy], which students are learning through the medium of the second language… the emphasis is on using the language rather than talking about it (p. 110).

By creating a planetarium show in the L2, the presenter is giving the students an opportunity to explore the language in a natural and meaningful way. The students are able to listen to, respond to and interact with the L2 in a setting where they do not have to worry about a teacher grading them on their ability to provide grammatically correct output or that they need to pass a test. Again though, presenters should remember to keep the astronomy content at
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French live shows and bilingual French-English live shows at the James S. McDonnell Planetarium have been met with appreciation and positive feedback from attendees. These shows have been able to keep native speaking visitors, students learning a new language, teachers and non-French speaking chaperones engaged and learning about the night sky and the universe around them. Currently, most of the visitors have been younger elementary school aged students from the French immersion school; however, there have also been a few groups of teenage and adult native French speakers on vacation who have appreciated having some content in their L1.

When offering shows in a world language, it is important to only regularly schedule these shows when the presenters who can speak the needed language are available. Another option, which is the route the McDonnell Planetarium took, is to make the show available only through a group reservation for a day when a bilingual staff member is available. If the planetarium is a public institution, it should be well designated that the program will not be in the L1 anywhere a visitor might see the show schedule. All box office team members should also be aware of the language difference so they can make those purchasing tickets aware of the language differences. Finally, it is good to also announce at the beginning of the show that it will be presented in an L2 so that anyone who may have misunderstood has time to exchange their tickets for ones to a show they will better comprehend.

Comprehensible input derived from interaction, then, may be quite different from, say, input from the radio or the TV, where the speaker is in absolute and complete control of both what is said and how it is said, and the learner has no opportunity to negotiate comprehension (p. 32).

This also means that the presenter needs to be aware of the audience’s responses (or lack thereof). Checking for comprehension with questions is always a good idea to ensure that the subject matter makes sense to the learner. If needed, circumlocution, the act of using a longer, more descriptive phrase to get a point across, rather than a shorter phrase with more advanced vocabulary, can be used to aid comprehension too.

It should be kept in mind too that students are most likely still new to the ideas presented in a planetarium, and that their L2 abilities may very well be limited, so grace is required. Lightbown and Spada (2006) remind educators that “In these situations the emphasis is on getting meaning across clearly, and more proficient speakers tend to be tolerant of errors that do not interfere with meaning” (p. 111). Therefore the presenter should not take it upon themselves to correct the language, but rather just allow for use of the language in a content-rich setting.

Furthermore, the presenter should be sure to give plenty of wait-time, perhaps even longer than one would normally wait for visitors in an L1 show to respond, for the visitors to answer any questions posed to them in the L2. This is due to needing time to access and activate vocabulary and grammar in the L2 which comes slower than it would in their L1 (VanPatten, 2003).

While it is best to provide input only in the target L2 and accept output in the L2 as well, if the show is bilingual one will not have that luxury. In a bilingual show situation, saying every single phrase in both languages is not necessary. While some repetition between the languages may occur, if meaning can be perceived in both languages through context, then a cadence of switching back and forth without as much direct translation may be achievable. It is good to encourage the visitors learning an L2 to respond only in the L2 and not in the L1, even if a question was posed in the L1. While not an ideal situation, this will at least give them the opportunity to practice using the vocabulary (and the presenter can respond in the affirmative both in the L2 and L1 if desired to encourage continued L2 usage).

While one may be able to follow a normal show flow in the second language (L2), it may not be advantageous to the group in attendance. As with any live show, it is always best to gauge the audience (in advance of their arrival if possible). If the group in attendance is made up of native speakers or they have been studying the L2 for a year or more, it may be easier to provide a show in the L2 that is closer to a live show given in one’s native language (L1) in terms of concepts and vocabulary. For more advanced users of the L2, (most likely older students who have had some astronomy previously in their Science courses), it may be possible to delve into more advanced topics such as the age of the universe, deep sky objects, and even black holes and quasars.

If the students in attendance are a group of novice learners, they may not have all of the necessary vocabulary to understand everything, and while content can and should be adjusted to be at the proper level of the group (VanPatten, 2003), one should not shy away from speaking normally. Beginning Astronomy topics can be covered even if the students know them in the L1 because this will give them an advantage for processing input, negotiating how the input is received, and producing meaningful output. Lee and VanPatten (2003) further these ideas, noting that communication in the L2 that is in person is helpful as

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While many live show presenters present without a script and create their shows as they go based on a show’s main ideas and audience feedback, as is done at the McDonnell Planetarium, in this instance it would be best practice for a presenter to prepare a script in advance. While this does not mandate the presenter to use the script in real time, it will force a potentially non-native speaker to think through what they want to say and how they want to say it so that they can model proper speech in the L2 for students. Also, as most world language instruction does not include a science unit or a large amount of astronomy vocabulary (most L2 instruction goes as far as giving the vocabulary for the Earth, Sun, Moon, planets, stars and maybe galaxy), the presenter may find they need to research some vocabulary for themselves in advance. Having a script prepared, or at least an outline with key vocabulary, will help a presenter feel more prepared when the time comes to work with visitors in the L2 under the dome.

As mentioned earlier in the paper, talking with the teacher prior to the visit can help ensure that students get as much out of their visit as possible. The first group to attend *Notre Ciel* was comprised of first grade students from a Saint Louis Language Immersion School (SLLIS) who had been speaking French for a year and students new to the school who did not know a lot of French. After talking to the teacher, a communicative show was created to accommodate the young learners at their varying levels. The feedback from the show was positive from the teacher, the students who shouted out answers in French and English, and even the parent chaperones who were surprised to find they understood a lot of the show even though it was completely in French.

It can be difficult getting the word out to teachers about the shows, and even within the same immersion school, teachers may or may not know that a trip to the planetarium is an option. Reaching out to schools and world language teachers personally has seemed to work best. Other means of communication can include e-Blasts or email newsletters, a small description in a program book, listings on the organization’s website, and asking reservation personnel to offer the show to those who are booking a visit. It should be noted though, that one should not assume that these later methods are a guaranteed way to capture groups; they do not appear to yield the same results. By speaking to a teacher or the principal personally, they learn of the presenter’s interest in working with them and together they can plan a way to move forward with a field trip.

A recent example as to how personal communication can make a difference involved the SLLIS. The French School, Spanish School and Chinese School all fall under the umbrella of SLLIS. A teacher who had brought her students in the spring of 2017 for *Notre Ciel* wound up with a mix of French and Chinese school students in her class during the 2017-2018 school year and felt she could not bring them as only half the students would understand the show in French. Before being able to discuss what could be worked out, they used their fieldtrip funds for the class to go somewhere else. A different teacher from the French School though, paired up with a teacher from the Chinese School to have enough students to bring to the Planetarium.

After a chat with the teachers prior to the start of their visit, it was decided that bilingual instruction would be helpful, and in the end, students thoroughly enjoyed a bilingual French-English show. The teachers were grateful that at least half the students could still be engaged in their L2, and the other students could still understand and participate in their L1. Students were engaged and responsive in both French and English, and the students from the French School were able to briefly converse about beginning concepts regarding stars and their temperatures, and the planets in French after the presentation. Being flexible allowed the students to benefit from the experience as much as possible, and the teachers are now discussing a French School field trip for the next school year.

**CONCLUSION**

Live French planetarium shows have been met with positive feedback at the James S. McDonnell Planetarium at the Saint Louis Science Center. The introduction of live world language planetarium shows has opened a new opportunity for world language classes, international visitors and the planetarium itself. It is the chance to introduce a new group to other cultures. It is also an occasion to create partnerships with new teachers and schools to introduce meaningful and communicative world language learning in a practical setting. By offering a live world language option, a planetarium is able to welcome a new audience to learn about and find a love of the universe.
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REFERENCES


